

DAFTAR MESIN DAN PERALATAN PROYEK PUPUK ISKANDAR MUDA - 2

NO. ITEM	URAIAN BARANG	SPEKIFIKASI TEHNIS	JUMLAH	UNIT
EX MASTER LIST NO.541/KM.5/2000				
1.38	PLANT AIR COMPRESSOR	TYPE SCREW, CAPACITY 2.050 NM3/H, PRESSURE : OUTER (1.00 KGF / XM2), INNER (9.553 KGF / CM2) WITH DIESEL ENGINE DRIVEN, POWER 300 KW	1	UNIT
EX MASTER LIST NO.763/KM.4/2001				
1	PIPING MATERIALS			
1.1	PIPE	PIPE (SMLS/WELDED): SIZE RANGE: 3/8" TO 60" SCH: 20 TO 180, MATERIAL : CS/ALLOY/SS.	21712.86	M
1.2	FITTING			
CONSIST OF ITEM NO. 1.2.1. UP TO 1.2.13				
1.2.1	ELBOW	45 ELBOW, 90 ELBOW: SIZE RANGE: 3/8" TO 60" CL 2000- 9000, SCH 20-180, MATERIAL: CS/ALLOY/SS.	7920	PC
1.2.2	REDUCER	REDUCER: SIZE RANGE: 1" TO 60" SCH 20 - 180, MATERIAL: CS/ALLOY/SS.	481	PC
1.2.3	TEE	TEE: SIZE RANGE: 1/2" TO 60" CL 2000 - 6000, SCH 20 - 180, MATERIAL CS/ALLOY/SS.	1095	PC
1.2.4	CAP	CAP: SIZE RANGE: 1/2" TO 60" CL 2000 - 6000, SCH 20 - 180, MATERIAL CS/ALLOY/SS.	309	PC
1.2.5	COUPLING	FULL COUPLING, HALF COUPLING, REDUCING COUPLING, SIZE RANGE: 1/2" TO 2" CL 2000 - 9000, MATERIAL: CS/ALLOY/SS.	2152	PC
1.2.6	PIPE WELD BRANCH	PIPE WELD BRANCH, PIPE WELD ANGULAR BRANCH: SIZE RANGE: 4"TO 60", SCH 20 - 160, MATERIAL: CS/ALLOY/SS.	75	PC
1.2.7	WELDING OUTLET	WELDING OUTLET: SIZE RANGE: 4" TO 32" SCH 80 - 160, MATERIAL: CS/ALLOY/SS.	19	PC
1.2.8	SOCKET OUTLET	SOCKET OUTLET: SIZE RANGE: 1" TO 20" CL 9000, SCH 80 - 180, MATERIAL: CS/ALLOY/SS.	158	PC
1.2.9	SPECIAL FITTING	SPECIAL FITTING: SIZE RANGE: 8 - 20", MATERIAL CS/ALLOY/SS.	10	PC
1.2.10	SPECIAL TUBE FITTING	SPECIAL TUBE FITTING: SIZE RANGE: 3/8" TO 1", MATERIAL: CS/ALLOY/SS,	50	PC
1.2.11	STUB END	STUB END: SIZE RANGE: 1" TO 32" SCH 10 - 100, MATERIAL: CS/ALLOY/SS.	20	PC
1.2.12	UNION	UNION: SIZE RANGE: 1/2" TO 2" - 1", MATERIAL: CS/ALLOY/SS,	5	PC
1.2.13	VENT STACK	VENT STACK: SIZE RANGE: 1/2" - 1", MATERIAL: CS/ALLOY/SS.	10	PC
1.3	VALVE			
CONSIST OF ITEM NO. 1.3.1. UP TO 1.3.10.				
1.3.1	GATE VALVE	GATE VALVE: SIZE RANGE: 1/2" TO 18" cl 150 - 2500, SCH 80 - 180, MATERIAL: CS/ALLOY/SS.	259	PC
1.3.2	GATE VALVE - MOV	GATE VALVE - MOV: SIZE RANGE: 6" TO 32" CL 300 - 1500, MATERIAL: CS/ALLOY/SS.	15	PC
1.3.3	BALL VALVE - MOV	BALL VALVE - MOV: SIZE RANGE: 6" TO 32" CL 300 - 1500, MATERIAL: CS/ALLOY/SS.	6	PC
1.3.4	GLOBE VALVE	GLOBE VALVE: SIZE RANGE: 1/2" TO 16" CL 150 - 1500, SCH 20 TO 160, MATERIAL: CS/ALLOY/SS.	1675	PC
1.3.5	BUTTERFLY VALVE	BUTTERFLY VALVE: SIZE RANGE: 2" TO 52" CL: 150, MATERIAL: CS/ALLOY/SS.	62	PC
1.3.6	CHECK VALVE	CHECK VALVE: SIZE RANGE: 1/2" TO 24" CL 150 - 2500, SCH 100 - 160, MATERIAL:	94	PC

		CS/ALLOY/SS.		
1.3.7	PLUG VALVE	PLUG VALVE: SIZE RANGE: 1/2" TO 2", MATERIAL: CS/ALLOY/SS.	200	PC
1.3.8	ANGLE VALVE	ANGLE VALVE: SIZE RANG: 1/2" TO 4" CL 1500, MATERIAL: CS/ALLOY/SS.	10	PC
1.3.9	NEEDLE VALVE	NEEDLE VALVE: SIZE RANGE: 1/2" TO 1" CL 800 TO 1500, MATERIAL: CS/ALLOY/SS.	19	PC
1.3.10	EXTENSION STEM VALVE	EXTENSION VALVE: SIZE RANGE: 6" TO 20", MATERIAL: CS/ALLOY/SS.	10	PC
1.4	SPECIALITY ITEM :	CONSIST OF ITEM NO. 1.4.1. UP TO 1.4.17		
1.4.1	EJECTOR	EJECTOR: SIZE RANGE: 1/2" - 4", MATERIAL: CS/ALLOY/SS.	10	PC
1.4.2	FLEXIBLE TUBE	FLEXIBLE TUBE: SIZE RANGE: 40" TO 60", MATERIAL: CS/ALLOY/SS.	190	PC
1.4.3	EXPANSION BELLOWS	EXPANSION BELLOWS: SIZE RANGE: 40" TO 60", MATERIAL: CS/ALLOY/SS.	6	PC
1.4.4	EYE WASHER & SHOWER	EYE WASHER & SHOWER: SIZE: 1 - 1/2', MATERIAL: CS/ALLOY/SS.	8	PC
1.4.5	STEAM TRAP	STEAM TRAP: SIZE RANGE: 1/2" TO 1" CL 150 - 600, MATERIAL: CS/ALLOY/SS.	2	PC
1.4.6	HOSE COUPLING	HOSE COUPLING: SIZE RANGE 1/2" - 1", MATERIAL: CS/ALLOY/SS.	84	PC
1.4.7	SPACER & BLANK	SPACER & BLANK : SIZE RANGE: 1/2" TO 32" CL 150 - 1500, MATERIAL: CS/ALLOY/SS.	36	PC
1.4.8	SPECIAL SPOOL PIECE	SPECIAL SPOOL PIECE: SIZE RANGE: 1" TO 60", MATERIAL: CS/ALLOY/SS.	20	PC
1.4.9	STRAINER	STRAINER: SIZE RANGE: 1/2" TO 32", MATERIAL: CS/ALLOY/SS.	20	PC
1.4.10	BOSS	BOSS: SIZE RANGE: 1/2" TO 20", MATERIAL: CS/ALLOY/SS.	160	PC
1.4.11	RUPTURE DISC	RUPTURE DISC: SIZE RANGE: 2" TO 16" CL 150, MATERIAL: CS/ALLOY/SS.	20	PC
1.4.12	SUPPORT MATERIALS	ANGLE, CHANNEL, MATERIAL: CS	420	M
1.4.13	SPRING HANGER	SPRING HANGER, SIZE RANGE: 2" TO 32", LENGTH: 500MM TO 2000MM, MATERIAL : CS	33	PC
1.4.14	SAMPLE COOLER	SAMPLE COOLER: SIZE RANGE: 1/2" TO 1 1/2", MATERIAL: CS/ALLOY/SS	22	PC
1.4.15	SIGHT GLASS	SIGHT GLASS, MATERIAL GLASS	9	PC
1.4.17	PIPING SUPPORT MATERIAL	CONSIST OF ITEM NO. 1.4.17.1 UP TO 1.4.17.6		
1.4.17.1	NON-ASBESTOS SHEET	NON-ASBESTOS SHEET: SIZE: 900MM X 900MM X 10T AND 1270MM X 1270MM X 3T	2	Sheet
1.4.17.2	TEFLON SHEET	TEFLON SHEET: SIZE = 80MM X 80MM X 3T	14	PCS
1.4.17.3	PIPE CLAMP	PIPE CLAMP, MATERIAL: CS/ALY/SS: 1" - 16" WITH ADHESIVE F/#82-77	12	PCS
1.4.17.4	CRADLE HANGER	CRADLE HANGER, MATERIAL: CS/ALY/S, SIZE 1" - 16" WITH ADHESIVE F/#82-77	10	PCS
1.4.17.5	CRADLE ANCHOR	CRADLE ANCHOR, MATERIAL: CS/ALY/S, SIZE 1" - 16" WITH ADHESIVE F/#82-77	7	PCS
1.4.17.6	CRADLE RESTING	CRADLE RESTING, MATERIAL: CS/ALY/S, SIZE 1" - 16" WITH ADHESIVE F/#82-77	70	PCS
1.4.17.7	CRADLE GUIDE	CRADLE GUIDE, MATERIAL: CS/ALY/S, SIZE 1" - 16" WITH ADHESIVE F/#82-77	35	PCS
1.4.17.8	BOLT/NUT	BOLT/NUT, MATERIAL: CS/ALY/SS. SIZE: 1" - 16" WITH ADHESIVE F/#82-77	8	PCS
1.4.17.9	FIXED BAND	FIXED BAND: MATERIAL: CS/ALY/SS, SIZE = 12" - 20"	5	PCS
1.4.17.10	U-BAND	U-BAND: MATERIAL: CS/ALY/SS, SIZE = 1/2" - 20"	1	PCS
1.4.17.11	BOLT/NUT	BOLT/NUT AND WASHER: MATERIAL: CS/ALY/SS, BOLT/NUT SIZE = M10-24, HAWK ANCHOR SIZE = M10-24.	538	PCS
1.4.17.12	ANCHOR BOLT	ANCHOR BOLT: MATERIAL: CS/ALY/SS, HAWK ANCHOR	369	PCS
1.4.17.13	U-BONT/NUT	U-BOLT/NUT: MATERIAL: CS/ALY/SS, SIZE =	327	PCS

		1/2" - 20", BOLT/NUT SIZE = M10-24		
1.4.17.14	FLAT STEEL	FLAT STEEL: SIZE = 50 - 1500 MM (W) X 300 - 5500 MM X (4 TO 22 MM (T)) MATERIAL: CS/ALY/SS	9	M
1.4.17.15	PLATE	PLATE: SIZE = 50 - 1500MM (W) X 300 - 5500MM X (4 TO 22 MM (T)) MATERIAL: CS/ALY/SS	127,50	M2
1.4.17.16	CHANNEL	CHANNEL (C100 - C150), : MATERIAL = CS. THICKNESS = 5 - 9 MM	148,50	M
1.4.17.17	H-STEEL	H-STEEL (H100 - H200): MATERIAL = CS, THICKNESS = 5 - 9 MM	18	M
1.4.17.18	ANGLE	ANGLE (L50 - L75): MATERIAL = CS, THICKNESS = 5 - 9 MM	277	M
1.5.	GASKET/BLOT AND NUT	CONSIST OF ITEM 1.5.1 TO 1.5.2		
1.5.1	GASKET	SPIRAL WOUND GASKET, JOINT SHEET GASKET, RING JOINT GASKET, INSULATION GASKET: SIZE RANGE: 3/8" TO 60" CL 150 - 2500	4409	PC
1.5.2	BOLT AND NUT	STUD BOLT/NUT, SPECIAL BOLT/NUT, INSULATION BOLT/NUT: SIZE RANGE: E5/8 TO U2, MATERIAL: CS/ALLOY	242736	PC
2	INSTRUMENT			
2.1	SPECIAL INSTRUMENT	CONSIST OF ITEM NO. 2.1.1 UP TO 2.1.10		
2.1.1	LEVEL GAUGE	TYPE: HP MULTI PORT TYPE, LARGE CHAMBER, REFLEX TYPE, TRANSPARENT TYPE, SIZE: 1/2" TO 4", MATERIAL CS/SS, RATING: ASME150LB RF TO 1500LB RF/RJ	26	PC
2.1.2	LEVEL SWITCH	TYPE: HP MULTI PORT TYPE, LARGE CHAMBER, REFLEX TYPE, TRANSPARENT TYPE, CAPACITANT TYPE, SIZE: 1" TO 2", MATERIAL: CS/SS, RATING: ASME150LB RF TO 1500LB RF/RJ	12	PC
2.1.3	TANK GAUGE	SIZE: 1" TO 2", MATERIAL: AL ALLOY CASTING/CS/SS, MEASURING METHOD, SPRING BALANCE, RATING: ASME150LB RF	2	PC
2.1.5	CONDUCTIVITY METER	TYPE, FLOW THROUGH TYPE, SIZE: 2" TO 6", 0 TO 14PH, MATERIAL: SS	2	PC
2.1.6	PH METER	TYPE FLOW THROUGH TYPE, SIZE: 1", RANGE: 0 TO 14PH, MATERIAL: SS	2	PC
2.1.7	LOUD DENSITY METER	TYPE: FLOW THROUGH TYPE, SIZE: 1/2" TO 2", RANGE: 0 TO 1500KG/M3, MATERIAL: SS	3	PC
2.1.10	ANALYZER	ZIRCONIUM OXYGEN ANALYZER, CONNECTION: 1/4NPT, MATERIAL: SS, FLUID, GLUE GAS, RANGE 0 - 5.0 VOL% (DRY)	8	PC
2.3	DISTRIBUTED CONTROL SYSTEM (DCS) AND PROGRAMMABLE LOGIC CONTROLLER (PLC)	CONSIST OF ITEM NO.2.3.1 UP TO 2.3.15		
2.3.1	CONSOLE TYPE HUMAN INTERFACE STATION	CONSOLE TYPE HUMAN INTERPACE STATION, CSL/LPH21C M1WGO111 WITH BRUSH, CONNECTION KIT, POWER CHECK UNIT, GROUNDING UNIT, V NET TERMINATOR, T-TYPE CONNECTOR, CONTROL BUS ADAPTER	9	PC
2.3.2	SERIAL PRINTER	SERIAL PRINTER, CSL/YPR120-S1111	3	PC
2.3.3	GENERAL PURPOSE PRINTER DESK	PRINTER DESK, CSL/YAX211-D2110,C11110	6	PC
2.3.4	DESK FOR CENTUM CS1000	DESK FOR CENTUM CS1000, CSL/YAX701-S11	2	PC
2.3.5	DUPLEXED FIELD CONTROL UNIT	DUPLEXED FIELD CONTROL UNIT, CS//AFS20D-H4111/3-NDF4	7	PC
2.3.6	CABLE	RS-422/RS-485 CABLE, SIGNAL CABLE, NULL MODEM CABLE, V NET CABLE, LENGTH = 5 - 30M, FABRICATED, C/W CONNECTOR	250	PC
2.3.7	FUSE	FUSE: 1.6A - 5A, FILTER, SHEET, CORE	237	PC
2.3.8	MONITOR	21" CRT MODEL: S103M, W/HP VECTRA VL18, HP1110, APCs-UPS	2	PC

2.3.9	MARSHALLING CABINET	MARSHALLING CABINET, 2100 - 1140MM (W) X 1140MM (D) X 2350MM (H)	22	PC
2.3.10	AUXILIARY CABINET	AUXILIARY CABINET, 1500MM (W) X 1140MM - 1700MM (D) X 2350 - 1600MM (H)	5	PC
2.3.11	ELCO CABLES	ELCO CABLES, USED FOR CONTROL SYSTEM (DCS, PLC), DIA 13.2 MM, CONNECTOR 48 PINS	1	PC
2.3.12	FSC SYSTEM	FSC CONTROL PARTS, FSC I/O RACKS, REDUNDANT, FSC SPECIAL MODULES	4	UNIT
2.3.13	POWER DISTRIBUTION CABINETS	POWER DISTRIBUTION CABINETS, 1500MM (W) X 1140MM (D) X 2350M (H)	2	PC
2.3.14	AUXILIARY CONSOLE	AUXILIARY CONSOLE, 1000 - 1400MM (W) X 1140MM - 1700MM (D) X 1600MM (H)	3	PC
2.3.15	CONTROL SYSTEM CABINET	CONTROL SYSTEM CABINET FOR BOILER, 63-BF-4002, AND TURBINE 62-GT-101, 61-102-JT, 61-105-JT, 61-101-JT, 61-103-JT	6	UNIT
2.4	INSTRUMENT MATERIALS	CONSIST OF ITEM NO.2.4.1 UP TO 2.4.15		
2.4.1	INSTRUMENT PRESSURE PIPING MATERIALS	CONSIST OF ITEM NO.2.4.1.1 UP TO 2.4.1.9		
2.4.1.1	INSTRUMENT UNION	INSTRUMENT UNION, CLASS 9000, MATERIAL CS/SS/ALY, SIZE: 1/2"	30	PCS
2.4.1.2	GAUGE CONNECTOR	GAUGE CONNECTOR, CLASS 3000 - 9000, MATERIAL: CS/SS/ALY	87	PCS
2.4.1.3	TEE	TEE, CLASS 3000, MATERIAL, CS, 1/2"	6	PCS
2.4.1.4	PLUG	PLUG, 22, 1/2" CLASS 3000	19	PCS
2.4.1.5	CONDENSATE POT	CONDENSATE POT, SIZE 3", MATERIAL CS/SS/ALY	21	PCS
2.4.1.6	NIPPLE	NIPPLE, 1/2" X 100L MATERIAL CS/SS/ALY	120	PCS
2.4.1.7	PIPE SYPHONE	PIPE SYPHONE, 1/2" - 3/4" MATERIAL CS/SS/ALY	16	PCS
2.4.1.8	CHAMBER	CHAMBER, 6" MATERIAL CS/SS/ALY	32	PCS
2.4.1.9	TAP COUPLING	TAP COUPLING, 1/2" - 1" X 1/2" - 1", MATERIAL CS/SS/ALY	71	PCS
2.4.2	STEEL CONDUIT AND FITTING/WIRING MATERIALS	CONSIST OF ITEM NO. 2.4.2.1 UP TO 2.4.2.7		
2.4.2.1	BUSHING	BUSHING, 1/2" - 1,1/2" MATERIAL CAST IRON	1340	PCS
2.4.2.1	LOCK NUT	LOCK NUT, 1/2" - 1,1/2" MATERIAL CAST IRON	1940	PCS
2.4.2.2	ADAPTER	ADAPTER, 1/2" - 2" (F) X 1/2" - 2" (M), GALVANIZED STEEL	134	PCS
2.4.2.3	BOLT TYPE CONNECTOR	BOLT TYPE CONNECTOR, FOR 25 SOR, MATERIAL COPPER	15	PCS
2.4.2.4	CABLE MARK	CABLE MARK, 1.8 W X 8.3L, CARRIER STRIP	490	PCS
2.4.2.5	MARKER	MARKER, WITH BLACK INSCRIPTION	24979	PCS
2.4.2.6	WIRE MARK TUBE	WIRE MARK TUBE, WHITE COLOR PVC TUBE	50	PCS
2.4.2.7	CRIMP TERMINAL	CRIMP TERMINAL, 1,5 - 6SQ, 5M	3500	PCS
2.4.3.	INSTALLATION AND FABRICATION MATERIALS	CONSIST OF ITEM NO.2.4.3.1UP TO 2.4.3.18		
2.4.3.1	ANGLE, MATERIAL CS, 4 - 5T 30-50 X 30-50MM	ANGLE, MATERIAL CS, 4 - 5T 30-50 X 30-50MM	225	PCS
2.4.3.3	STEEL PLATE	STEEL PLATE, 1 - 8MM (T) 914 - 1219 X 1829 - 2438MM, MATERIAL CS	5	PCS
2.4.3.5	LIP CHANNEL	LIP CHANNEL, MATERIAL CS, 2.3 - 5MM (T)	12	PCS
2.4.3.6	PIPE STANCHION	PIPE STANCHION, 2" - 3" X 1300 - 1500MM (L), GAL V, STEEL	163	PCS
2.4.3.7	HEX BOLT/NUT	HEX BOLT/NUT, 6M - 12M, X 25 - 60MM (L)	300	PCS
2.4.3.8	CROSS RECESSED HEAD	CROSS RECESSED HEAD, M4 - M6, 10L - 20L	70	PCS
2.4.3.9	EXPANSION BOLT	EXPANSION BOLT, 8M - 12M, 80L - 100L	330	PCS
2.4.3.11	U-BOLT/NUT	U-BOLT/NUT, M6 - M12 X B8 - B50	2645	PCS
2.4.3.12	CLAMP	CLAMP, MATERIAL SS, 20 - 44MM	750	PCS
2.4.3.13	TUBE BAND	TUBE BAND, 12W X 1T	1070	PCS
2.4.3.14	BIND WIRE	BIND WIRE, MATERIAL SS, CS,ALY	49	PCS

2.4.3.16	TAPE	TAPE, TEFLON, RUBBER, VINYL	2590	PCS
2.4.3.17	RUBBER SHEET	RUBBER SHEET, RUBBER 1000X1000X3MM(T)	87	PCS
2.4.3.18	SEALING MATERIALS	SEALING MATERIALS, LIQUID TYPE, PUTTY TYPE	50	PCS
2.4.4	INSTRUMENTATION CABLE	PVC INSULATED CABLE: 1P - 10P, 1,5 - 2,5SQmm/2C - 10C, 1,5 - 6SQmm	25000	M
2.4.5	CONDUIT	RIGID STEEL CONDUIT, ZINC COATED: SIZE = 1/2" - 2" X 10"	65	PCS
2.4.6	CABLE GLAND	WATERPROOF TYPE, MATERIAL = BRASS, SIZE = 1/2"NPT - 1.1/4"NPT / FLAME PROOF TYPE, MATERIAL = STEEL, SIZE = CS/ALY/SS	257	PCS
2.4.10	PIPE	PIPE: SIZE = 1/2" - 1-1/2" X 5,5M(L), SCH 40 - 160, MATERIAL = CS/ALY/SS	89	PCS
2.4.11	FLANGE	FLANGE: SIZE = 1/2" - 1-1/2", SCH 40 - 160, MATERIAL = CS/ALY/SS	68	PCS
2.4.13	BOLT/NUT	BOLT AND NUT: SIZE = U1/2 - U1 X 60 - 150MM(L), MATERIAL = CS/ALY/SS	35	SETS
2.4.15	TUBING MATERIALS	TUBE, VALVE WITH UNION, MALE CONNECTOR, FEMALE CONNECTOR, UNION TEE, TUBE UNION, PLUG, SPARE SLEEVE, SIZE = 1/2", MATERIAL = SS	134	PCS
3.1	UNNINTERRUPTIBLE POWER SUPPLY SYSTEM (UPS)	CONSISTING OF ITEM 3.2 UP TO 3.11		
3.2	UPS UNIT	UNINTERRUPTIBLE POWER SUPPLY UNIT (UPS-3-5), PDW 3080-220/190-EAN	1	UNIT
3.3	BYPASS UNIT	BYPASS UNIT AND BATTERY MCCB BOX	1	UNIT
3.4	FLAME BATTERY CELL	FLAME BATTERY CELL, TYPE SMBF/11, DRY CHANGED, BATTERY ACCESSORIES,	130	PC
3.5	BATTERY RACK	BATTERY RACK 2P-500/4000 AND 2P-500/2500	4	UNIT
3.6	BATTERY LIQUID	20-LITER JERRICAN LIQUID ELECTROLYTE 1,24	165	PC
4.2	BALLAST BALL	BALLAST BALL FOR 61-109-DA/DB, 61-111-D, 61-104-D1, 61-104-D2, 61-106-D, 61-108-D, 61-201-DA/DB/DC AND 61-202-D, DENSITY! 1620KG/M3, SIZE 3MM TO 25MM	81,00	M3
5.1	MATERIALS FOR DISTRIBUTED CONTROL SYSTEM/PROGRAMMABLE LOGIC CONTROLER CONSISTING OF ITEM 5.1.1 TO 5.1.53			
5.1.1	PROCESSER CARD FOR AFS20D	Model: CP33D Manufactured by YOKOGAWA	2	PC
5.1.2	V-NET INTERFACING CARD	Model: VF701 Manufactured by YOKOGAWA	1	PC
5.1.3	V-NET INTERFACING CARD FOR CONSOLE HUMAN INTERFACE STATION (HIS)	Model: VF381 Manufactured by YOKOGAWA	3	PC
5.1.4	WIDE-SCSI COMMUNICATION CARD	Model: AIP283 Manufactured by YOKOGAWA	1	PC
5.1.5	DISPLAY CARD	Model: AIP285 Manufactured by YOKOGAWA	1	PC
5.1.6	MAN-MACHINE CONTROL CARD	Model: AIP131 Manufactured by YOKOGAWA	2	PC
5.1.7	MOUSE FOR CONSOLE HIS	Model: AIP817 Manufactured by YOKOGAWA	18	PC
5.1.8	MOUSE PAD FOR CONSOLE HIS	Model: T9070PZ Manufactured by YOKOGAWA	9	PC
5.1.9	OPERATION KEYBOARD FOR CONSOLE HIS	Model: S9226UK Manufactured by YOKOGAWA	2	PC
5.1.10	CRT UNIT FOR CONSOLE HIS	Model: S9230UK Manufactured by YOKOGAWA	9	PC
5.1.11	HARD DISK FOR CONSOLE HIS	Model: AIP481 Manufactured by YOKOGAWA	9	PC
5.1.12	MEDIA DRIVE UNIT FOR CONSOLE HIS	Model: AIP492 Manufactured by YOKOGAWA	3	PC
5.1.13	POWER SUPPLY UNIT FOR CONSOLE HIS	Model: PW803 Manufactured by YOKOGAWA	2	PC
5.1.14	POWER SUPPLY UNIT FOR AFS20D	Model: PW301 Manufactured by YOKOGAWA	2	PC
5.1.15	POWER SUPPLY UNIT FOR NIU	Model: PW401 Manufactured by YOKOGAWA	2	PC
5.1.16	BACK-UP MEMORY BATTERY FOR	Model: S9400UK Manufactured by	8	PC

	AFS20D	YOKOGAWA		
5.1.17	FAN UNI FOR AFS20D	Model: AIP601 Manufactured by YOKOGAWA	4	PC
5.1.18	FAN FOR CONSOLE HIS, AFS20D	Model: A1096EM Manufactured by YOKOGAWA	10	PC
5.1.19	AIR FILTER	Model: T9070CB Manufactured by YOKOGAWA	13	PC
5.1.20	FUNCTION KEY LABEL	Model: T9070PN Manufactured by YOKOGAWA	9	PC
5.1.21	ANALOG INPUT MODULE (1 CHANNEL)	Model: AAM10 Manufactured by YOKOGAWA	40	PC
5.1.22	ANALOG OUTPUT MODULE (1 CHANNEL)	Model: AAM50 Manufactured by YOKOGAWA	30	PC
5.1.23	PULSE INPUT MODULE (1 CHANNEL)	Model: APM11 Manufactured by YOKOGAWA	5	PC
5.1.24	THERMOCOUPLE INPUT MULTIPLEXER MODULE (16PTS)	Model: AMM22T Manufactured by YOKOGAWA	3	PC
5.1.25	RTD INPUT MULTIPLEXER MODULE (16PTS)	Model: AMM32T Manufactured by YOKOGAWA	3	PC
5.1.26	CONTACT INPUT MODULE (32 PTS, CONNECTOR TYPE)	Model: ADM12C Manufactured by YOKOGAWA	3	PC
5.1.27	CONTACT OUTPUT MODULE (32 PTS CONNECTOR TYPE)	Model: ADM52C Manufactured by YOKOGAWA	3	PC
5.1.28	RS232C OR 422/485 COMMUNICATION MODULE	Model: ACM11/ACM12 Manufactured by YOKOGAWA	3	PC
5.1.29	PRINT HEAD	Model: A1182UY Manufactured by YOKOGAWA	6	PC
5.1.30	PLATEN ROLL	Model: A1183UY Manufactured by YOKOGAWA	6	PC
5.1.31	FAN	Model: A1191UY Manufactured by YOKOGAWA	3	PC
5.1.32	POWER SUPPLY UNIT (110VAC)	Model: A1187UY Manufactured by YOKOGAWA	3	PC
5.1.33	VERTICAL BUS DRIVER	Model: 10001/R/1 Manufactured by Honeywell Safety Management System	1	PC
5.1.34	CPU MODULE	Model: 10012/1/2 Manufactured by Honeywell Safety Management System	1	PC
5.1.35	COMMUNICATION MODULE RS422+RS232	Model: 10014/H/I Manufactured by Honeywell Safety Management System	1	PC
5.1.36	COMMUNICATION MODULE RS485+RS232	Model: 10014/I/F Manufactured by Honeywell Safety Management System	1	PC
5.1.37	WATCHDOG	Model: 10005/1/I Manufactured by Honeywell Safety Management System	1	PC
5.1.38	DIAGNOSTIC BATTER MODULE	Model: 10006/2/I Manufactured by Honeywell Safety Management System	1	PC
5.1.39	24V TO 5C O 12A DC/DC CONVERTER	Model: 10300/2/1 Manufactured by Honeywell Safety Management System	1	PC
5.1.40	WATCHDOG REAPEATER	Model: 10302/1/1 Manufactured by Honeywell Safety Management System	1	PC
5.1.41	POWER DISTRIBUTION MODULE	Model: 10313/1/1 Manufactured by Honeywell Safety Management System	1	PC
5.1.42	HORIZONTAL BUS DRIVER	Model: 10100/2/1 Manufactured by Honeywell Safety Management System	1	PC
5.1.43	DI-FS MODULE, FAIL SAFE DISITAL INPUT MODULE	Model: 10101/2/1 Manufactured by Honeywell Safety Management System	2	PC
5.1.44	AI-FS MODULE, FAIL SAFE ANALOG INPUT MODULE	Model: 10105/2/1 Manufactured by Honeywell Safety Management System	2	PC
5.1.45	DO-FS MODULE, FAIL SAFE DIGITAL OUTPUT MODULE	Model: 10201/2/1 Manufactured by Honeywell Safety Management System	3	PC
5.1.46	DO-NFS MODULE, NON FAIL SAFE DIGITAL OUTPUT MODULE	Model: 10209/2/1 Manufactured by Honeywell Safety Management System	1	PC
5.1.47	FTA-T-03, DIGITAL INPUT TERMINAL BOARD	Model: FTA-T03 Manufactured by Honeywell Safety Management System	1	PC
5.1.48	FTA-T-08, DIGITAL OUTPUT TERMINAL BOARD	Model: FTA-T08 Manufactured by Honeywell Safety Management System	3	PC
5.1.49	FTA-T-09, DIGITAL INPUT TERMINAL BOARD	Model: FTA-T09 Manufactured by Honeywell Safety Management System	1	PC
5.1.50	FTA-T-14, ANALOG INPUT TERMINAL BOAR	Model: FTA-T14 Manufactured by Honeywell Safety Management System	1	PC
5.1.51	FTA-T-15, POWER SUPPLY BOARD	Model: FTA-T15 Manufactured by Honeywell Safety Management System	1	PC

5.1.52	FTA-T-21, DIGITAL INPUT TERMINAL BOARD	Model: FTA-T21 Manufactured by Honeywell Safety Management System	1	PC
5.1.53	23VAC/24VDC PSU, DC POWER UNIT	Model: 1200 S 24 P067 Manufactured by Honeywell Safety Management System	1	PC
5.2	MATERIALS FOR 52-GA-101A,B AMMONIA FEED PUMP CONSISTING OF ITEM 5.2.1 TO 5.2.29			
5.2.1	CASING GASKET	MATERIAL SUS304+NON-ASBESTOS, DWG NO: P9RY02584/01/905, PART NO: 744, OD477.4	2	PC
5.2.2	CASING GASKET	MATERIAL SUS304+NON-ASBESTOS, DWG NO: P9RY02584/01/905, PART NO: 744, OD431.7	2	PC
5.2.3	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-1, ID389	2	PC
5.2.4	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-2, AN6230-29	2	PC
5.2.5	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-3, G-65	6	PC
5.2.6	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-4, AN6230-40	2	PC
5.2.7	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-5, AN6227-64	2	PC
5.2.8	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-6, AN6230-34	2	PC
5.2.9	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-7, G-30	8	PC
5.2.10	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-8, G-25	8	PC
5.2.11	O-RING	MATERIAL: EPR. DWG NO: P9RY02584/01/905, PART NO: 747-9, ORBG-160FO	4	PC
5.2.12	BACK UP RING	MATERIAL: TEFLON. DWG NO: P9RY02584/01/905, PART NO: 747-28, ID389.5	2	PC
5.2.13	RADIAL BEARING	MATERIAL: S20C/WJ2. DWG NO: P9RY02584/01/905, PART NO: 291, BGF75	2	PC
5.2.14	THRUST BEARING	MATERIAL: S15C/WJ2, DWG NO: P9RY02584/01/905, PART NO: 659, KTB5	2	PC
5.2.15	OIL SEAL	MATERIAL: SS400/WJ2, DWG NO: P9RY02584/01/905, PART NO: 656, KTB5	2	PC
5.2.16	MECHANICAL SEAL ELEMENTS	DWG NO: P9RY02584-01-980, PART NO: 1-1,2-1,2-2,3A,3B,4-1,4-2., ZB22-R79	4	PC
5.2.17	SLEEVE SEAL FOR AOP	MATERIAL: SUS304, DWG NO: P9RY02584-01-980, PART NO: 31, ZB22-R79	2	PC
5.2.18	SHAFT SEAL FOR AOP	DWG NO: 058A1A2936, PART NO: 520	1	PC
5.2.19	GASKET FOR AOP	MATERIAL: PAPER, DWG NO: 058A1A2936, 164X112	2	PC
5.2.20	O-RING FOR AOP	MATERIAL: FPM, DWG NO: 058A1A2936, PART NO: 522, ID49.4	1	PC
5.2.21	ELEMENT FOR OIL FILTER	MATERIAL: PAPER, DWG NO: CH044-23-2-FP, PART NO: 13,25U	4	PC
5.2.22	PACKING FOR OIL FILTER	MATERIAL: NBR, DWG NO: CH044-23-2-FP, PART NO: 22, OD142	4	PC
5.2.23	PACKING FOR OIL FILTER	MATERIAL: NBR, DWG NO: CH044-23-2-FP, PART NO: 23, OD98	8	PC
5.2.24	O-RING FOR OIL FILTER	MATERIAL: NBR, DWG NO: CH044-23-2-FP, PART NO: 24, G80	2	PC
5.2.25	O-RING FOR OIL FILTER	MATERIAL: NBR, DWG NO: CH044-23-2-FP, PART NO: 25, P-50	2	PC
5.2.26	O-RING FOR OIL FILTER	MATERIAL: NBR, DWG NO: CH044-23-2-FP, PART NO: 26, G80	2	PC

5.2.27	O-RING FOR OIL COOLER	MATERIAL: NBR, DWG NO: W-214N00E, PART NO: 30, ID196.2	4	PC
5.2.28	GAKSET FOR OIL COOLER	MATERIAL: NON-ASBESTOS, DWG NO: W-214N00E, PART NO: 31, OD257	2	PC
5.2.29	GAKSET FOR OIL COOLER	MATERIAL: NON-ASBESTOS, DWG NO: W-214N00E, PART NO: 32, OD257	2	PC
5.3	MATERIALS FOR 62-GA-102A, B CARBAMATE FEED PUMP CONSISTING OF ITEM 5.3.1 TO 5.3.30			
5.3.1	BEARING METAL	MATERIAL: S20CW/WJ2, DWG NO: RY0258402-105, PART NO: 52, BGF-80	2	PC
5.3.2	OIL SEAL	MATERIAL: SS400/WJ2, DWG NO: RY0258402-105, PART NO: 114, BGF-80	2	PC
5.3.3	O RING	MATERIAL: NBR, DWG NO: RY0258402-105, PART NO: 115-1, AN6230-12	6	PC
5.3.4	O RING	MATERIAL: NBR, DWG NO: RY0258402-105, PART NO: 115-4, G45	4	PC
5.3.5	GASKET	MATERIAL: TEFLON WITH GLASS, DWG NO: RY0258402-105, PART NO: 117-1, DELTA RING	12	PC
5.3.6	GASKET	MATERIAL: TEFLON WITH GLASS, DWG NO: RY0258402-105, PART NO: 117-2, O.D. 76	16	PC
5.3.7	GASKET	MATERIAL: TEFLON WITH GLASS, DWG NO: RY0258402-105, PART NO: 117-3, O.D. 70	2	PC
5.3.8	GASKET	MATERIAL: TEFLON WITH GLASS, DWG NO: RY0258402-105, PART NO: 117-4, O.D. 30	4	PC
5.3.9	GASKET	MATERIAL: TEFLON WITH GLASS, DWG NO: RY0258402-105, PART NO: 117-5, O.D. 70	4	PC
5.3.10	GASKET	MATERIAL: TEFLON WITH GLASS, DWG NO: RY0258402-105, PART NO: 117-6, O.D. 26	2	PC
5.3.11	GASKET	MATERIAL: TEFLON WITH GLASS, DWG NO: RY0258402-105, PART NO: 117-7, O.D. 206	4	PC
5.3.12	GASKET	MATERIAL: NON-ASBESTOS, DWG NO: RY0258402-105, PART NO: 117-8, O.D. 232	2	PC
5.3.13	GASKET	MATERIAL: NON ASBESTOS, DWG NO: RY0258402-105, PART NO: 117-9, O.D. 170	2	PC
5.3.14	O RING	MATERIAL: NBR, DWG NO: W-197N00E, PART NO: 34, AN6227-71	4	PC
5.3.15	GASKET	MATERIAL: NON ASBESTOS, DWG NO: W-197N00E, PART NO: 35, O.D. 257	2	PC
5.3.16	GASKET	MATERIAL: NON ASBESTOS, DWG NO: W-197N00E, PART NO: 36, O.D. 257	2	PC
5.3.17	MECH. SEAL	DWG NO: T3-27916, PART NO: 100/90-BV28-YM	4	PC
5.3.18	O RING	MATERIAL: EPR, DWG NO: T3-27916, PART NO: 11, G140	4	PC
5.3.19	SLEEVE	MATERIAL: R-4, DWG NO: T3-27916, PART NO: 13	2	PC
5.3.20	O RING	MATERIAL: EPR, DWG NO: T3-27916, PART NO: 14, G80	4	PC
5.3.21	FILTER ELEMENT	MATERIAL: PAPER/SECC, DWG NO: CH043-18-1-FP, PART NO: 13	4	PC
5.3.22	O RING	MATERIAL: NBR, DWG NO: CH043-18-1-FP, PART NO: 21, G105	4	PC
5.3.23	GASKET	MATERIAL: NBR, DWG NO: CH043-18-1-FP, PART NO: 22, O.D. 142	4	PC
5.3.24	GASKET	MATERIAL: NBR, DWG NO: CH043-18-1-FP, PART NO: 23, O.D. 98	8	PC
5.3.25	O RING	MATERIAL: NBR, DWG NO: CH043-18-1-FP, PART NO: 24, G80	2	PC
5.3.26	O RING	MATERIAL: NBR, DWG NO: CH043-18-1-FP, PART NO: 25, P50	2	PC
5.3.27	O RING	MATERIAL: NBR, DWG NO: CH043-18-1-FP, PART NO: 26, G80	2	PC
5.3.28	MECH. SEAL	DWG NO: 059A1A3787, PART NO: 520	1	PC

5.3.29	O RING	MATERIAL: FPM, DWG NO: 059A1A3787, PART NO: 522, G60	1	PC
5.3.30	SIDE PACKING	MATERIAL: PAPER, DWG NO: 059A1A3787	2	PC
5.4	MATERIALS FOR 81-104 J,JA BFW PUMP CONSISTING OF ITEM 5.4.1 TO 5.4.27			
5.4.1	O RING	MATERIAL: EPR, PART NO: 115-3, AN6227-82	4	PC
5.4.2	O RING	MATERIAL: EPR, PART NO: 115-4, AN6227-81	2	PC
5.4.3	O RING	MATERIAL: EPR, PART NO: 115-5, G260	2	PC
5.4.4	O RING	MATERIAL: EPR, PART NO: 115-6, G240	2	PC
5.4.5	O RING	MATERIAL: EPR, PART NO: 115-7, AN6230-41	2	PC
5.4.6	O RING	MATERIAL: EPR, PART NO: 115-8, G105	2	PC
5.4.7	O RING	MATERIAL: EPR, PART NO: 115-9, P105	2	PC
5.4.8	O RING	MATERIAL: EPR, PART NO: 115-10, AN6230-16	6	PC
5.4.9	O RING	MATERIAL: EPR, PART NO: 115-11, G55	4	PC
5.4.10	GASKET	MATERIAL: NON ASBESTOS, PART NO: 117, O.D. 232	2	PC
5.4.11	O RING	MATERIAL: NBR, DWG NO: W-185N00E, PART NO: 34, AN6227-61	4	PC
5.4.12	GASKET	MATERIAL: NON ASBESTOS, DWG NO: W-185N00E, PART NO: 35, O.D. 202	2	PC
5.4.13	GASKET	MATERIAL: NON ASBESTOS, DWG NO: W-185N00E, PART NO: 36, O.D. 202	2	PC
5.4.14	MECH. SEAL	DWG NO: R990364301-120, PART NO: BXRW-4250	4	PC
5.4.15	O RING	MATERIAL: VITON, DWG NO: R990364301-120, PART NO: S-18	4	PC
5.4.16	SLEEVE	MATERIAL: SUS316, DWG NO: R990364301-120, PART NO: S-1	2	PC
5.4.17	O RING	MATERIAL: VITON, DWG NO: R990364301-120, PART NO: S-19	4	PC
5.4.18	FILTER ELEMENT	MATERIAL: PAPER/SECC, DWG NO: CH043-19-1-FP, PART NO: 13	4	PC
5.4.19	O RING	MATERIAL: NBR, DWG NO: CH043-19-1-FP, PART NO: 21, G105	4	PC
5.4.20	GASKET	MATERIAL: NBR, DWG NO: CH043-19-1-FP, PART NO: 22, O.D. 142	4	PC
5.4.21	GASKET	MATERIAL: PAPER, DWG NO: CH043-19-1-FP, PART NO: 23, O.D. 98	8	PC
5.4.22	O RING	MATERIAL: NBR, DWG NO: CH043-19-1-FP, PART NO: 24, G80	2	PC
5.4.23	O RING	MATERIAL: NBR, DWG NO: CH043-19-1-FP, PART NO: 25, P50	2	PC
5.4.24	O RING	MATERIAL: NBR, DWG NO: CH043-19-1-FP, PART NO: 26, G80	2	PC
5.4.25	MECH. SEAL	DWG NO: 059A1A3790, PART NO: 520	1	PC
5.4.26	O RING	MATERIAL: FPM, DWG NO: 059A1A3790, PART NO: 522	1	PC
5.4.27	SIDE PACKING	MATERIAL: PAPER, DWG NO: 059A1A3790	2	PC
5.5	MATERIALS FOR 63-GA-4001A,B BOILER FEED WATER PUMP CONSISTING OF ITEM 5.5.1 TO 5.5.9			
5.5.1	O RING	MATERIAL: EPR, PART NO: 115-3, AN6230-48	4	PC
5.5.2	O RING	MATERIAL: EPR, PART NO: 115-4, G180	2	PC
5.5.3	O RING	MATERIAL: EPR, PART NO: 115-5, AN6227-40	4	PC
5.5.4	O RING	MATERIAL: EPR, PART NO: 115-6, AN6230-37	2	PC
5.5.5	GASKET	MATERIAL: NON-ASBESTOS, PART NO: 117, O.D. 190	2	PC
5.5.6	MECH. SEAL	MATERIAL: -, DWG NO: R990364302-120, PART NO: -, OBW-3250	4	PC

5.5.7	O RING	MATERIAL: VITON, DWG NO: R990364302-120, PART NO: S-18	4	PC
5.5.8	SLEEVE	MATERIAL: SUS316, DWG NO: R990364302-120, PART NO: S-1	2	PC
5.5.9	O RING	MATERIAL: VITON, DWG NO: R990364302-120, PART NO: S-19	4	PC
5.6	MATERIALS FOR 61-114-J.JA CONDENSATE PUMP CONSISTING OF ITEM 5.6.1 TO 5.6.8			
5.6.1	MECHANICAL SEAL	MATERIAL: -, DWG NO: R990364501-105, PART NO: 111, QBQ-2250	2	PC
5.6.2	MECHANICAL SEAL SLEEVE	MATERIAL: SUS304, DWG NO: R990364501-105, PART NO: 042, 50.8X121.3	1	PC
5.6.3	O RING (FOR SEAL END PLATE)	MATERIAL: VITON, DWG NO: R990364501-105, PART NO: 115-1, 3.53X104.37	2	PC
5.6.4	O RING (FOR SLEEVE)	MATERIAL: VITON, DWG NO: R990364501-105, PART NO: 115-2, 3.53X44.04	2	PC
5.6.5	O RING (FOR INTERMEDIATE CASING)	MATERIAL: VITON, DWG NO: R990364501-105, PART NO: 115-4, 3.1X192.9	6	PC
5.6.6	O RING (FOR TOP CASING)	MATERIAL: VITON, DWG NO: R990364501-105, PART NO: 3.1X192.9	2	PC
5.6.7	O RING (FOR COLUMN)	MATERIAL: VITON, DWG NO: R990364501-105, PART NO: 3.1X168.5	6	PC
5.6.8	GASKET (FOR BARREL)	MATERIAL: 18-8 S.S SPIRAL WOUND/TEFLON, DWG NO: R990364501-105, PART NO: , 341X364X3.2	2	PC
5.7	MATERIALS FOR 62-GA-106A,B STEAM CONDENSATE PUMP CONSISTING OF ITEM 5.7.1 TO 5.7.7			
5.7.1	MECHANICAL SEAL SLEEVE	MATERIAL: SUS304, DWG NO: R990364502-105, PART NO: 042, 45X66		PC
5.7.2	MECHANICAL SLEEVE	MATERIAL: SIC/C, DWG NO: R990364502-105, PART NO: 111, QBLQ-045	2	PC
5.7.3	O RING	MATERIAL: TEFLON, DWG NO: R990364502-105, PART NO: 115-1, G70	2	PC
5.7.4	O RING	MATERIAL: NBR, DWG NO: R990364502-105, PART NO: 115-13, G40	4	PC
5.7.5	GASKET	MATERIAL: V#6500AC, DWG NO: R990364502-105, PART NO: 117-1, 334X355X1	2	PC
5.7.6	GASKET	MATERIAL: V#6500AC, DWG NO: R990364502-105, PART NO: 117-6, 32X39X1	2	PC
5.7.7	GASKET	MATERIAL: OIL SHEET, DWG NO: R990364502-105, PART NO: 117-7, 90X110X0.2	4	PC
5.8	MATERIALS FOR 62-GA-302A,B EVAPORATOR FEED PUMP CONSISTING OF ITEM 5.8.1 TO 5.8.6			
5.8.1	PACKING SLEEVE	MATERIAL: SUS304, DWG NO: R990364503-105, PART NO: 041, 45X98	1	PC
5.8.2	O RING	MATERIAL: NBR, DWG NO: R990364503-105, PART NO: 115-13, G40	4	PC
5.8.3	GASKET	MATERIAL: V#7010-2N0, DWG NO: R990364503-105, PART NO: 117-1, 224X240X1	2	PC
5.8.4	GASKET	MATERIAL: V#7010-2N0, DWG NO: R990364503-105, PART NO: 117-6, 32X39X1	2	PC
5.8.5	GASKET	MATERIAL: OIL SHEET, DWG NO: R990364503-105, PART NO: 117-7, 90X110X0.2	4	PC
5.8.6	GLAND PACKING	MATERIAL: P#4507L, DWG NO: R990364503-105, PART NO: 119, 45X65X10	10	PC

5.9	MATERIALS FOR 61-102-J FEED GAS COMPRESSOR CONSISTING OF ITEM 5.9.1 TO 5.9.17			
5.9.1	JOURNAL BEARING PAD WITH RTO	MATERIAL: S25C+WJ2B, DOC NO: 350-013651, 63334, 63356, SUPPLIER: HITACHI	2	PC
5.9.2	THRUST BEARING SHOE WITH RTD	DOC NO: 350-013651, 63101, SUPPLIER: KINGSBURY	1	PC
5.9.3	IMPELLER EYE LABYRINTH	MATERIAL: AC7A-F, DOC NO: 350-013651, 55101,04, 07, 10, SUPPLIER: HITACHI	4	PC
5.9.4	INTERSTAGE LABYRINTH	MATERIAL: AC7A-F, DOC NO: 350-013651, 55201, 04, 07, SUPPLIER: HITACHI	3	PC
5.9.5	BALANCE LABYRINTH	MATERIAL: AC7A-F, DOC NO: 350-013651, 55301, SUPPLIER: HITACHI	1	PC
5.9.6	GAS SEAL LABYRINTH	MATERIAL: AC7A-F, DOC NO: 350-013651, 55401, SUPPLIER: HITACHI	2	PC
5.9.7	OIL SEAL LABYRINTH	MATERIAL: AC7A-F, DOC NO: 350-013651, 55405, SUPPLIER: HITACHI	2	PC
5.9.8	END LABYRINTH	MATERIAL: AC7A-F, DOC NO: 350-013651, 55412, SUPPLIER: HITACHI	1	PC
5.9.9	O-RING/GASKET FOR GASING	MATERIAL: NBR/VITON/NON-ASBESTOS, DOC NO: 350-013651, 43033, 45007, 52511, 55409, SUPPLIER: HITACHI	1	PC
5.9.10	GASKET (COUPLING COVER)	MATERIAL: NON-ASBESTOS, DOC NO: 350-013651, 71015, 71018, SUPPLIER: HITACHI	3	PC
5.9.11	FLUID PACKING	MATERIAL: SILICON, SUPPLIER: HITACHI	1	PC
5.9.12	ELEMENTS FOR BUFFER GAS FILTER	MATERIAL: GLASS MICRO FIVER (100-25DX), SUPPLIER: TAIYO-TECHNO	2	PC
5.9.13	O-RING/GASKET FOR BUFFER GAS FILTER	MATERIAL: NBR-PTFE, SUPPLIER: TAIYO-TECHNO	2	PC
5.9.14	COUPLING SPACER	MATERIAL: SNCM439, DOC NO: 350-2139910, SUPPLIER: EAGLE	1	PC
5.9.15	DRY GAS SEAL	DOC NO: 350-014746, SUPPLIER: FLOWSERVE	2	PC
5.9.16	O-RING/GASKET FOR DRY GAS SEAL	MATERIAL: FLUORCARBON, DOC NO: 350-014746, 30, 31, 35, 36, SUPPLIER: FLOWSERVE	4	PC
5.9.17	ROTOR	MATERIAL: Cr-MO-STEEL, DOC NO: 350-013651, SUPPLIER: HITACHI	1	PC
5.10	MATERIALS FOR LUBE OIL UNIT FOR 61-101-J/61-102-J/61-103-J CONSISTING OF ITEM 5.10.1 TO 5.10.14			
5.10.1	SHAFT SEAL FOR LUBE OIL PUMP	DOC NO: 350-S4206304, 0001-00A-M, SUPPLIER: MARUSHICHI	1	PC
5.10.2	GASKET/O-RING FOR LUBE OIL PUMP	MATERIAL: ASBESTOS/FKM, DOC NO: 350-S4206304, 000100-A-G1,MS-96988-1-32, 52, SUPPLIER: MARUSHICHI	2	PC
5.10.3	BEARING FOR LUBE OIL PUMP	MATERIAL: AISI 52100, DOC NO: 350-S4206304, 000100-A-42A, 42B, SUPPLIER: MARUSHICHI	1	PC
5.10.4	BEARING FOR LUBE OIL PUMP MOTOR	MATERIAL: 6212C3, DOC NO: 350-S4202909, 2.1, 12.1, SUPPLIER: FUJI ELEC	1	PC
5.10.5	SHAFT SEAL FOR EMERGENCY PUMP	DOC NO: 350-S4206304, 520, 532, 202, SUPPLIER: KOSAKA	1	PC
5.10.6	GASKET/O-RING FOR EMERGENCY PUMP	MATERIAL: NBR/A1100P, DOC NO: 350-S4206304, 031, 032, 042, 043, 071, 230, 531, 801, 802, SUPPLIER: KOSAKA	1	PC
5.10.7	BEARING FOR EMERGENCY PUMP	MATERIAL: AJ2/SUJ2, DOC NO: 350-S4206304, 255, 256, 257, 540, SUPPLIER: KOSAKA	1	PC
5.10.8	BEARING FOR EMERGENCY PUMP MOTOR	MATERIAL: 6207ZZ/6308ZZ, DOC NO: 350-S4202909, 2.1, 12.1, SUPPLIER: FUJI	1	PC

		ELEC		
5.10.9	BEARING FOR AUX. STEAM TURBINE	MATERIAL : LATER, DOC NO : 350-S4206415, LATER, SUPPLIER : COPPUS	1	PC
5.10.10	PACKING FOR AUX. STEAM TURBINE	MATERIAL : LATER, DOC NO : 350-S4206415, LATER, SUPPLIER : COPPUS	1	PC
5.10.11	CARBON RING FOR AUX. STEAM TURBINE	MATERIAL : LATER, DOC NO : 350-S4206415, LATER, SUPPLIER : COPPUS	1	PC
5.10.12	ELEMENT FOR LUBE OIL FILTER	MATERIAL : PAPER, DOC NO : 350-S4214300, 15, SUPPLIER : TAIYO-TECHNO	2	PC
5.10.13	GASKET/O-RING FOR LUBE OIL FILTER	MATERIAL : NBR, DOC NO : 350-S4214300, 3, SUPPLIER : TAIYO-TECHNO	2	PC
5.10.14	GASKET/O-RING FOR OIL COOLER	MATERIAL : NON-ASBESTOS, DOC NO : 350-2148023, 11, 12, SUPPLIER : DONG HWA	2	PC
5.11	MATERIALS FOR 61-105-J NH3 REF. COMPRESSOR CONSISTING OF ITEM 5.11.1 TO 5.11.29			
5.11.1	JOURNAL BEARING PAD WITH RTD (LP)	MATERIAL : S25C+WJ2B, DOC NO. : 350-014741, 83334, SUPPLIER : HITACHI	2	PC
5.11.2	THRUST BEARING SHOE WITH RTD (LP)	DOC NO. : 350-014741, 63101, SUPPLIER : KINGSBURY	1	PC
5.11.3	JOURNAL BEARING PAD WITH RTD (HP)	MATERIAL : S25C+WJ2B, DOC NO.: 350-014742, 63434, SUPPLIER : HITACHI	2	PC
5.11.4	THRUST BEARING SHOE WITH RTD (HP)	DOC NO.: 350-214742, 63101, SUPPLIER : KINGSBURY	1	PC
5.11.5	IMPELLER EYE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014741, 55101, 04, 07, 10, 13, SUPPLIER : HITACHI	5	PC
5.11.6	IMPELLER EYE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014742, 56101, 04, 07, 10, 13, 16, SUPPLIER : HITACHI	6	PC
5.11.7	INTER STAGE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014741, 55201, 04, 07, 10, SUPPLIER : HITACHI	4	PC
5.11.8	INTER STAGE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014742, 56201, 07, 10, 13, SUPPLIER : HITACHI	4	PC
5.11.9	BALANCE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014741, 55300, SUPPLIER : HITACHI	1	PC
5.11.10	BALANCE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014742, 56300, SUPPLIER : HITACHI	1	PC
5.11.11	GAS SEAL LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014741, 55401, 02, SUPPLIER : HITACHI	2	PC
5.11.12	GAS SEAL LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014742, 56401, 02, SUPPLIER : HITACHI	2	PC
5.11.13	OIL SEAL LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014741, 55406, SUPPLIER : HITACHI	2	PC
5.11.14	OIL SEAL LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014742, 56406, SUPPLIER : HITACHI	2	PC
5.11.15	END LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014741, 55412, SUPPLIER : HITACHI	1	PC
5.11.16	END LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014741, 56412, SUPPLIER : HITACHI	1	PC
5.11.17	O-RING/GASKET FOR CASING (LP)	MATERIAL : SILICON/VITON/NBR/NON-ASBESTOS, DOC NO.: 350-014741, 43017, 18, 36, 39, 45004, 55409, SUPPLIER : HITACHI	1	PC
5.11.18	O-RING/GASKET FOR CASING (HP)	MATERIAL : SILICON/VITON/NBR/NON-ASBESTOS, DOC	1	PC

		NO.: 350-014742, 43017, 18, 36, 39, 56409, SUPPLIER : HITACHI		
5.11.19	GASKET (COUPLING COVER) (LP-HP)	MATERIAL : NON-ASBESTOS, DOC NO.: 350-014741, 71017, 18, 19, 20, SUPPLIER : HITACHI	4	PC
5.11.20	GASKET (COUPLING COVER) (HP-S/T)	MATERIAL : NON-ASBESTOS, DOC NO.: 350-014742, 71017, 18, 19, 20, SUPPLIER : HITACHI	4	PC
5.11.21	FLUID PACKING	MATERIAL : SILICON, SUPPLIER : HITACHI	1	PC
5.11.22	ELEMENTS FOR BUFFER GAS FILTER	MATERIAL : GLASS MICRO FIVER (200-35-DXS), SUPPLIER : TAIYO-TECHNO	2	PC
5.11.23	O-RING/GASKET FOR BUFFER GAS FILTER	MATERIAL : EPT/PTFE, SUPPLIER : TAIYO-TACHNO	2	PC
5.11.24	COUPLING SPACER	MATERIAL : SNCM439, DOC NO.: 350-2146806, SUPPLIER : EAGLE	1	PC
5.11.25	DRY GAS SEAL (LP)	DOC NO.: 350-014749 (LP), SUPPLIER : FLOWSERVE	2	PC
5.11.26	DRY GAS SEAL (HP)	DOC NO.: 350-014750 (HP), SUPPLIER : FLOWSERVE	2	PC
5.11.27	O-RING/GASKET FOR DRY GAS SEAL (LP)	MATERIAL : PARUFLUOR, DOC NO.: 350-014749(LP); 30, 31, 35, 36, SUPPLIER : FLOWSERVE	4	PC
5.11.28	O-RING/GASKET FOR DRY GAS SEAL (HP)	MATERIAL : PARUFLUOR, DOC NO.: 350-014750(LP); 30, 31, 35, 36, SUPPLIER : FLOWSERVE	4	PC
5.11.29	ROTOR	MATERIAL : Cr-MO-STEEL, DOC NO.: 350-014741, 350-14742 SUPPLIER : HITACHI	2	PC
5.12	MATERIALS FOR LUBE OIL UNIT FOR 61-105-J-NH3 REF. COMPRESSOR CONSISTING OF ITEM 5, 12, 1 TO 5, 12, 10			
5.12.1	SHAFT SEAL FOR LUBE OIL PUMP	DOC NO.: 350-S4200407, 520, 532, 202, SUPPLIER : KOSAKA	1	PC
5.12.2	GASKET/O-RING FOR LUBE OIL PUMP	MATERIAL : NBR/A1100P, DOC NO.: 350-S4200407, 031, 032, 042, 043, 071, 230, 531, 801, 802, SUPPLIER : KOSAKA	2	PC
5.12.3	BEARING FOR LUBE OIL PUMP	MATERIAL : AJ2/SUJ2, DOC NO.: 350-S4200407, 255, 256, 257, 540, SUPPLIER : KOSAKA	1	PC
5.12.4	BEARING FOR LUBE OIL PUMP MOTOR	MATERIAL : 6308 ZZ/6309 ZZC3, DOC NO.: 350-S4202919, 2.1, 12.1, SUPPLIER : FUJI ELEC	1	PC
5.12.5	BEARING FOR AUX. STEAM TURBINE	MATERIAL : LATER, DOC NO.: 350-S4206416, LATER, SUPPLIER : COPPUS	1	PC
5.12.6	PACKING FOR AUX. STEAM TURBINE	MATERIAL : LATER, DOC NO.: 350-S4206416, LATER, SUPPLIER : COPPUS	1	PC
5.12.7	CARBON RING FOR AUX. STEAM TURBINE	MATERIAL : LATER, DOC NO.: 350-S4206416, LATER, SUPPLIER : COPPUS	1	PC
5.12.8	ELEMENT FOR LUBE OIL FILTER	MATERIAL : PAPER, DOC NO.: 350-S4214296, 15, SUPPLIER : TAIYO-TECHNO	2	PC
5.12.9	GASKET/O-RING FOR LUBE OIL FILTER	MATERIAL : NON-ASBESTOS, DOC NO.: 350-4214296, 3, SUPPLIER : TAIYO-TECHNO	2	PC
5.12.10	GASKET/O-RING FOR OIL COOLER	MATERIAL : NON-ASBESTOS, DOC NO.: 350-2148022, 11, 12, SUPPLIER : DONGHWO	2	PC
5.13	MATERIALS FOR 61-101-J PROCESS AIR COMPRESSOR CONSISTING OF ITEM 5.13.1 TO 5.13.24			
5.13.1	JOURNAL BEARING PAD WITH RTD (LP)	MATERIAL : S25C+WJ2B, DOC NO.: 350-014743, 63334, SUPPLIER : HITACHI	2	PC
5.13.2	THRUST BEARING SHOE WITH RTD (LP)	DOC NO.: 350-014743, 63101, SUPPLIER : KINGSBURY	1	PC
5.13.3	JOURNAL BEARING PAD WITH RTD (HP)	MATERIAL : S25C+WJ2B, DOC NO.: 350-014752, 63534, SUPPLIER : HITACHI	2	PC
5.13.4	THRUST BEARING SHOE WITH RTD (HP)	DOC NO.: 350-014752, 63101, SUPPLIER : KINGSBURY	1	PC

5.13.5	IMPELLER EYE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014743, 55101, 04, 07, 10, 13, SUPPLIER : HITACHI	5	PC
5.13.6	IMPELLER EYE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014752, 56101, 04, 07, 10, 13, 16, 19, SUPPLIER : HITACHI	7	PC
5.13.7	INTER STAGE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014743, 55201, 07, 10, SUPPLIER : HITACHI	3	PC
5.13.8	INTER STAGE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014752, 56201, 04, 10, 13, 16, SUPPLIER : HITACHI	5	PC
5.13.9	BALANCE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014743, 55301, SUPPLIER : HITACHI	1	PC
5.13.10	BALANCE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014752, 56301, SUPPLIER : HITACHI	1	PC
5.13.11	GAS SEAL LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014743, 55401, SUPPLIER : HITACHI	2	PC
5.13.12	GAS SEAL LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014752, 56401, SUPPLIER : HITACHI	2	PC
5.13.13	OIL SEAL LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014743, 55405, SUPPLIER : HITACHI	2	PC
5.13.14	OIL SEAL LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014752, 56405, SUPPLIER : HITACHI	2	PC
5.13.15	END LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014743, 55410, SUPPLIER : HITACHI	1	PC
5.13.16	END LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014752, 56410, SUPPLIER : HITACHI	1	PC
5.13.17	O-RING/GASKET FOR CASING (LP)	MATERIAL : VITON/NBR/NON-ASBESTOS, DOC NO.: 350- 014743, 43033, 35, 37, 40, 44006, SUPPLIER : HITACHI	1	PC
5.13.18	O-RING/GASKET FOR CASING (HP)	MATERIAL : VITON/NBR, DOC NO.: 350-014752, 43033, 35, 37, 40, SUPPLIER : HITACHI	1	PC
5.13.19	GASKET (COUPLING COVER) (LP-HP)	MATERIAL : NON-ASBESTOS, DOC NO.: 350-014743, 71013, 14, 15, 16, SUPPLIER : HITACHI	4	PC
5.13.20	GASKET (COUPLING COVER) (HP-S/T)	MATERIAL : NON-ASBESTOS, DOC NO.: 350-014752, 71018, 19, 20, 21, 22, SUPPLIER : HITACHI	5	PC
5.13.21	FLUID PACKING	MATERIAL : SILICON, SUPPLIER : HITACHI	1	PC
5.13.22	COUPLING SPACER	MATERIAL : SNCM439, DOC NO.: 350-2146160 (LP-HP), SUPPLIER : EAGLE	1	PC
5.13.23	COUPLING SPACER	MATERIAL : SNCM439, DOC NO.: 350-2146161 (HP-S/T), SUPPLIER : EAGLE	1	PC
5.13.24	ROTOR	MATERIAL : Cr-MO-STEEL, DOC NO.: 350-014743, 350-014752, SUPPLIER : HITACHI	2	PC
5.14	MATERIALS FOR 51-103-J SYNTHESIS GAS COMPRESSOR CONSISTING OF 5.14.1 TO 5.14.30			
5.14.1	JOURNAL BEARING PAD WITH RTD (LP)	MATERIAL ; S25C+WJ2B, DOC NO.: 350-014847, 63334, 37, SUPPLIER : HITACHI	2	PC
5.14.2	THRUST BEARING SHOE WITH RTD (LP)	DOC NO.: 350-014847, 63101, SUPPLIER : KINGSBURY	1	PC
5.14.3	JOURNAL BEARING PAD WITH RTD (HP)	MATERIAL ; S25C+WJ2B, DOC NO.: 350-014817, 63334, 37, SUPPLIER : HITACHI	2	PC
5.14.4	THRUST BEARING SHOE WITH RTD (HP)	DOC NO.: 350-014817, 63101, SUPPLIER : KINGSBURY	1	PC
5.14.5	IMPELLER EYE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014847, 55101, 04, 07, 10, 13, 16, 19, 22, 25, SUPPLIER : HITACHI	9	PC

5.14.6	IMPELLER EYE LABYRINTH (HP)	MATERIAL : AC7A-F/SUS316, DOC NO.: 350-014817, 56101, 04, 07, 10, 13, 16, 19, 22, SUPPLIER : HITACHI	8	PC
5.14.7	INTER STAGE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014847, 55201, 04, 07, 10, 16, 19, 22, SUPPLIER : HITACHI	7	PC
5.14.8	INTER STAGE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014817, 56201, 04, 07, 10, 13, 16, SUPPLIER : HITACHI	8	PC
5.14.9	BALANCE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014847, 55301, SUPPLIER : HITACHI	1	PC
5.14.10	BALANCE LABYRINTH (HP)	MATERIAL : SUS316, DOC NO.: 350-014817, 56301, 05, SUPPLIER : HITACHI	2	PC
5.14.11	GAS SEAL LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014847, 55401, SUPPLIER : HITACHI	2	PC
5.14.12	GAS SEAL LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014817, 56401, SUPPLIER : HITACHI	2	PC
5.14.13	OIL SEAL LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014847, 55405, SUPPLIER : HITACHI	2	PC
5.14.14	OIL SEAL LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014817, 56405, SUPPLIER : HITACHI	2	PC
5.14.15	END LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-014847, 55410, SUPPLIER : HITACHI	1	PC
5.14.16	END LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014817, 56409, SUPPLIER : HITACHI	1	PC
5.14.17	O-RING/GASKET FOR CASING (LP)	MATERIAL : VITON/TEFLON/NON-ASBESTOS, DOC NO.: 350- 014847, 43030, 35, 47011, 52517, 55408, SUPPLIER : HITACHI	1	PC
5.14.18	O-RING/GASKET FOR CASING (HP)	MATERIAL : SILICON/TEFLON/NON-ASBESTOS, DOC NO.: 350-014817, 43028, 32, 35, 38, 47005, 52517, 56405, SUPPLIER : HITACHI	1	PC
5.14.19	GASKET (COUPLING COVER) (LP-S/T)	MATERIAL : NON-ASBESTOS, DOC NO.: 350-014847, 71012, 13, SUPPLIER : HITACHI	2	PC
5.14.20	GASKET (COUPLING COVER) (HP-S/T)	MATERIAL : NON-ASBESTOS, DOC NO.: 350-014817, 71015, 16, 17, SUPPLIER : HITACHI	3	PC
5.14.21	FLUID PACKING	MATERIAL : SILICON, SUPPLIER : HITACHI	1	PC
5.14.22	ELEMENT FOR BUFFER GAS FILTERS	MATERIAL : GLASS MICRO FIVER (100-25-DXS), SUPPLIER : TAIYO-TECHNO	2	PC
5.14.23	O-RING/GASKET FOR BUFFER GAS FILTER	MATERIAL : SILICON/PTFE, SUPPLIER : TAIYO-TECHNO	2	PC
5.14.24	COUPLING SPACER	DOC NO.: 350-2147202 (LP-S/T), SUPPLIER : REXNORD (LP-S/T)	1	PC
5.14.25	COUPLING SPACER	DOC NO.: 350-2147203 (HP-S/T), SUPPLIER : PILLAR (HP-S/T)	1	PC
5.14.26	DRY GAS SEAL (LP)	DOC NO.: 350-014747 (LP), SUPPLIER : FLOWSERVE	2	PC
5.14.27	DRY GAS SEAL (HP)	DOC NO.: 350-014748 (HP), SUPPLIER : FLOWSERVE	2	PC
5.14.28	O-RING/GASKET FOR DRY SEAL (LP)	MATERIAL : TFM/FLUORCARBON, DOC NO.: 350-014747 (LP), 30, 31, 35, 36, SUPPLIER : FLOWSERVE	4	PC
5.14.29	O-RING/GASKET FOR DRY SEAL (HP)	MATERIAL : TFM/FLUORCARBON, DOC NO.: 350-014748 (HP), 30, 31, 35, 36, SUPPLIER : FLOWSERVE	4	PC
5.14.30	ROTOR	MATERIAL : Cr-MO-STEEL, DOC NO.: 350-014847, 350-014817, SUPPLIER : HITACHI	2	PC
5.15	MATERIALS FOR 62-GB-101 CO2 COMPRESSOR AND GEAR CONSISTING OF ITEM 5.15.1 TO 5.15.29			
5.15.1	JOURNAL BEARING PAD WITH RTD (LP)	MATERIAL : S25C+WJ2B, DOC NO.: 350-013992, 63334, 56, SUPPLIER : HITACHI	2	PC
5.15.2	THRUST BEARING SHOE WITH RTD (LP)	DOC NO : 350-013992, 63101, SUPPLIER : KINGSBURY	1	PC

5.15.3	JOURNAL BEARING PAD WITH RTD (HP)	MATERIAL : S25C+WJ2B, DOC NO.: 350-014003, 63334, SUPPLIER : HITACHI	2	PC
5.15.4	THRUST BEARING SHOE WITH RTD (HP)	DOC NO : 350-014003, 63101, SUPPLIER : KINGSBURY	1	PC
5.15.5	IMPELLER EYE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-013992, 55101, 04, 07, 10, 13, 16, SUPPLIER : HITACHI	6	PC
5.15.6	IMPELLER EYE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014003, 56101, 04, 07, 10, 13, 16, SUPPLIER : HITACHI	6	PC
5.15.7	INTER STAGE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-013992, 55201, 07, 10, 13, SUPPLIER : HITACHI	4	PC
5.15.8	INTER STAGE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014003, 56201, 04, 07, 10, 13, SUPPLIER : HITACHI	5	PC
5.15.9	BALANCE LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-013992, 55301, SUPPLIER : HITACHI	1	PC
5.15.10	BALANCE LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014003, 56301, SUPPLIER : HITACHI	1	PC
5.15.11	GAS SEAL LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-013992, 55401, 04, SUPPLIER : HITACHI	2	PC
5.15.12	GAS SEAL LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014003, 56401, SUPPLIER : HITACHI	2	PC
5.15.13	OIL SEAL LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-013992, 55407, SUPPLIER : HITACHI	2	PC
5.15.14	OIL SEAL LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014003, 56404, SUPPLIER : HITACHI	2	PC
5.15.15	END LABYRINTH (LP)	MATERIAL : AC7A-F, DOC NO.: 350-013992, 55410, SUPPLIER : HITACHI	1	PC
5.15.16	END LABYRINTH (HP)	MATERIAL : AC7A-F, DOC NO.: 350-014003, 56410, SUPPLIER : HITACHI	1	PC
5.15.17	O-RING/GASKET FOR CASING (LP)	MATERIAL : V-6500, DOC NO.: 350- 013992, 47106, 08 SUPPLIER : HITACHI	1	PC
5.15.18	O-RING/GASKET FOR CASING (HP)	MATERIAL : TEFLON/VITON/V-6500, DOC NO.: 350-014003, 43029, 33, 36, 39, 53001, 02, 03, 05, 56519, 47005, SUPPLIER : HITACHI	1	PC
5.15.19	GASKET (COUPLING COVER) (LP-S/T)	MATERIAL : V-6500, DOC NO.: 350-013992, 71012, 13, 14, 15, SUPPLIER : HITACHI	4	PC
5.15.20	GASKET (COUPLING COVER) (LP-G)	MATERIAL : V-6500, DOC NO.: 350-013992, 72011, 12, 13, SUPPLIER : HITACHI	3	PC
5.15.21	GASKET (COUPLING COVER) (HP-G)	MATERIAL : V-6500, DOC NO.: 350-014003, 71015, 16, 17, SUPPLIER : HITACHI	3	PC
5.15.22	FLUID PACKING	MATERIAL : SILICON, SUPPLIER : HITACHI	1	PC
5.15.23	COUPLING SPACER (LP-S/T)	DOC NO.: 350-2147141(LP-S/T), SUPPLIER : EAGLE	1	PC
5.15.24	COUPLING SPACER (LP-G)	DOC NO.: 350-2147142(LP-G), SUPPLIER : EAGLE	1	PC
5.15.25	COUPLING SPACER (HP-G)	DOC NO.: 350-2147143(HP-G), SUPPLIER : EAGLE	1	PC
5.15.26	BEARING FOR SPEED INCREASING GEAR	DOC NO.: 350-180719, 05, 06, 07, 08, 09, SUPPLIER : HITACHI	1	PC
5.15.27	GASKET FOR SPEED INCREASING GEAR	DOC NO.: 350-180719, SUPPLIER : HITACHI	1	PC
5.15.28	ROTOR FOR COMPRESSOR	MATERIAL : Cr-MO-STEEL, DOC NO.: 350-013992, SUPPLIER: HITACHI	1	PC
5.15.29	ROTOR FOR GEAR	MATERIAL : Cr-MO-STEEL, DOC NO.: 350-014003, SUPPLIER: HITACHI	1	PC
5.16	MATERIALS FOR LUBE OIL UNIT FOR ITEM NO. 62-GB-101 CO2 COMPRESSOR CONSISTING OF ITEM 5.16.1 TO 5.16.11			
5.16.1	SHAFT SEAL FOR LUBE OIL PUMP	DOC NO.: 350-S4206345, 000099-A-M, SUPPLIER : MARUSHICHI	1	PC

5.16.2	GASKET/O-RING FOR LUBE OIL PUMP	MATERIAL : ASBESTOS/FKM, DOC NO.: 350+S4206345, 000099-A-G1, MS-96987-1-32, 52, SUPPLIER : MARUSHICHI	2	PC
5.16.3	BEARING FOR LUBE OIL PUMP	MATERIAL : AISI52100, DOC NO.: 350-S4206345, 000099A- 42A, 42B, SUPPLER : MARUSHICHI	1	PC
5.16.4	BEARING FOR LUBE OIL PUMP MOTOR	MATERIAL : 6212C3, DOC NO.: 350-S4202920, 2.1, 12.1, SUPPLIER : FUJI ELEC	1	PC
5.16.5	ELEMENT FOR LUBE OIL FILTER	MATERIAL : PAPER, DOC NO.: 350-S4214295, 15, SUPPLIER: TAIYO-TECHNO	2	PC
5.16.6	GASKET/O-RING FOR LUBE OIL FILTER	MATERIAL : NBR, DOC NO.: 350-S4214295, 3, SUPPLIER : TAIYO-TECHNO	2	PC
5.16.7	GASKET/O-RING FOR OIL COOLER	MATERIAL : NON-ASBESTOS, DOC NO.: 350-2148021, 11, 12, SUPPLIER : DONGHWA	2	PC
5.16.8	SHAFT SEAL FOR EMERGENCY PUMP	DOC NO.: 350-S4206345, 502, 532, 202, SUPPLIER : KOSAKA	1	PC
5.16.9	GASKET/O-RING FOR EMERGENCY PUMP	MATERIAL : NBR/A1100P, DOC NO.: 350-4206345, 031, 032, 042, 043, 071, 230, 531, 801, 802, SUPPLIER : KOSAKA	1	PC
5.16.10	BEARING FOR EMERGENCY PUMP	MATERIAL : AJ2/SUJ2, DOC NO.: 350-S4206345, 255, 256, 257, 540, SUPPLIER : KOSAKA	1	PC
5.16.11	BEARING FOR EMERGENCY PUMP MOTOR	MATERIAL : 6308ZZ/620ZZ, DOC NO.: 350-S4202920, 2.1, 12.1, SUPPLIER : FUJI ELEC	1	PC
5.17	MATERIALS FOR 61-102-JT STEAM TURBINE FOR FEED GAS COMPRESSOR CONSISTING OF ITEM 5.17.1 TO 5.17.4			
5.17.1	BEARING PAD/SHOES	MATERIAL : S25CWJ1, DOC NO.: 11055-0001-10, 3, 5, 15, SUPPLIER : SHIN-NIPPON MACHINERY	3	PC
5.17.2	LABYRINTH	MATERIAL : NIRESIST, DOC NO.: 11055-0001-10, 19, SUPPLIER : SHIN-NIPPON MACHINERY	10	PC
5.17.3	GASKETS	MATERIAL : V#8590/8596, SUPPLIER : SHIN-NIPPON MACHINERY	3	PC
5.17.4	ROTOR	MATERIAL : Cr-MO-STEEL, DOC NO.: 11055-0001-10, SUPPLIER : SHIN-NIPPON MACHINERY	1	PC
5.18	MATERIALS FOR 61-106-JT STEAM TURBINE FOR NH3 REF. COMPRESSOR CONSISTING OF ITEM 5.18.1 TO 5.18.4			
5.18.1	BEARING PAD/SHOES	MATERIAL : S25CWJ1, DOC NO.: 11056-0001-10, 4, 6, 24, SUPPLIER : SHIN-NIPPON MACHINERY	3	PC
5.18.2	LABYRINTH	MATERIAL : Ni-Pb-Bc/SM400B, DOC NO.: 11055-0001-10, 7, 8, 21, SUPPLIER : SHIN-NIPPON MACHINERY	12	PC
5.18.3	GASKETS	MATERIAL : V#8590/8596, SUPPLIER : SHIN-NIPPON MACHINERY	2	PC
5.18.4	ROTOR	MATERIAL : Cr-MO-STEEL, DOC NO.: 11055-0001-10, SUPPLIER : SHIN-NIPPON MACHINERY	1	PC
5.19	MATERIALS FOR 61-101 JT STEAM TURBINE FOR PROCESS AIR COMPRESSOR CONSISTING OF ITEM 5.19.1 TO 5.19.5			
5.19.1	TILTING PADS FOR FRONT BEARING	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.19.2	TILTING PADS FOR REAR BEARING	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.19.3	TILTING PADS FOR THRUST	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC

	BEARING			
5.19.4	SEALING STRIP AND CAULKING MATERIAL	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.19.5	GASKET AND O-RING	SUPPLIER : SIEMENS, MATERIAL : RUBBER	1	PC
5.19.6	ROTOR	MATERIAL : Cr-MO-STEEL, SUPPLIER : SIEMENS	1	PC
5.20	MATERIALS FOR 61-103-JT STEAM TURBINE FOR SYNTHESIS GAS COMPRESSOR CONSISTING OF ITEM S.20.1 TO 5.20.6			
5.20.1	TILTING PADS FOR FRONT BEARING	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.20.2	TILTING PADS FOR REAR BEARING	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.20.3	TILTING PADS FOR THRUST BEARING	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.20.4	SEALING STRIP AND CAULKING MATERIAL	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.20.5	GASKET AND O-RING	SUPPLIER : SIEMENS, MATERIAL : RUBBER	1	PC
5.20.6	ROTOR	MATERIAL : Cr-MO-STEEL, SUPPLIER : SIEMENS	1	PC
5.21	MATERIALS FOR 62-GT-101 STEAM TURBINE FOR CO2 COMPRESSOR CONSISTING OF ITEM 5.21.1 TO 5.21.6			
5.21.1	TILTING PADS FOR FRONT BEARING	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.21.2	TILTING PADS FOR REAR BEARING	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.21.3	TILTING PADS FOR THRUST BEARING	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.21.4	SEALING STRIP AND CAULKING MATERIAL	SUPPLIER : SIEMENS, MATERIAL : SS	1	PC
5.21.5	GASKET AND O-RING	SUPPLIER : SIEMENS, MATERIAL : RUBBER	1	PC
5.21.6	ROTOR	MATERIAL : Cr-MO-STEEL, SUPPLIER : SIEMENS	1	PC
6	GRANULATION PREFABRICATED STEEL STRUCTURE	CONSIST OF ITEM NO. 6.1 UP TO 6.7		
6.1	STRUCTURE STEEL FOR BUILDING	MATERIAL : CS, BIGGER SIZE OF H-SECTION, I-SECTION, L-SECTION, C-SECTION	360	TON
6.2	STRUCTURE STEEL FOR MISC. STRUCTURE	MATERIAL : CS, SMALLER SIZE OF H-SECTION, I-SECTION, L-SECTION, C-SECTION, BOLT AND NUT	6	TON
6.3	CHECKERED PLATE FLOOR	MATERIAL : CS, CHECKERED PLATE, 4.5 - 6MM (T) SIZE 1-2 X 1-2M	23	TON
6.4	GRAITING FLOOR	MATERIAL : CS, GRAITING, 20 - 40MM (T) SIZE 1-2 X 1-2M	14	TON
6.5	STEEL HANDRAIL	MATERIAL : CS, FLAT BAR, ROUND BAR, PIPE, ANGLE, SIZE 1.5 - 2M(L) X 1 - 1.2M(H)	9	TON
6.6	STEEL LADDER	MATERIAL : CS, FLAT BAR, ROUND BAR, PIPE, SEVERAL SHAPE	4	TON
6.7	STEEL STAIRCASE	MATERIAL : CS, FLAT BAR, ROUND BAR, PIPE, SEVERAL SHAPE	4	TON
7	ELECTRICAL	CONSIST OF ITEM NO. 7.1 UP TO 7.5		
7.5	CONTROL SWITCH STATION	ON - OFF PUSH BUTTON : SUITABLE FOR HAZARDOUS OR NON HAZARDOUS AREA : CONDUIT HUB 3/4" NPT TO 1" NPT	31	UNIT
7.6	OUTDOOR LIGHTING FIXTURE	CONSIST OF ITEM NO. 6.6.1 UP TO 6.6.11		
7.7	FLUORESCENT LIGHTING FIXTURE	220 V, 1 PHASE, 50 HZ, CEILING TYPE, BRACKET TYPE, PIPE PENDANT TYPE, STANCHION TYPE, C/W BULB	13	UNIT
8.1	MATERIAL FOR PUMP (61-108-J,JA)	CONSIST OF ITEM NO. 8.1.1 UP TO 8.1.3		

8.1.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQ-2750 CAPACITY : DIMENSION OR SIZE : 2750 MATERIAL : 5A3X	2	UNIT
8.1.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 2J2424 CAPACITY : DIMENSION OR SIZE : 54X124 MATERIAL : SUS316	1	UNIT
8.1.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : O 250 etc MATERIAL : 316S.W.TEFLON etc	2	UNIT
8.2	MATERIAL FOR PUMP (61-113-J,JA)	CONSIST OF ITEM NO. 8.2.1 UP TO 8.2.3		
8.2.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQ-3375 CAPACITY : DIMENSION OR SIZE : 3375 MATERIAL : 5A5X	2	UNIT
8.2.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 3J12234 CAPACITY : DIMENSION OR SIZE : 70X136 MATERIAL : SUS316	1	UNIT
8.2.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : O 400 etc MATERIAL : 316S.W.TEFLON etc	2	UNIT
8.3	MATERIAL FOR PUMP (61-121-J,JA)	CONSIST OF ITEM NO. 8.3.1 UP TO 8.3.3		
8.3.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQ-3375 CAPACITY : DIMENSION OR SIZE : 3375 MATERIAL : 5A4X	2	UNIT
8.3.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 3J12234 CAPACITY : DIMENSION OR SIZE : 70X136 MATERIAL : SUS316	1	UNIT
8.3.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : O 400 etc MATERIAL : 316S.W.TEFLON etc	2	UNIT
8.4	MATERIAL FOR PUMP (61-124-J,JA)	CONSIST OF ITEM NO. 8.4.1 UP TO 8.4.3		
8.4.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQW/QBQW-2750/2500 CAPACITY : DIMENSION OR SIZE : 2750/2500 MATERIAL : SUYX/SUYX	2	UNIT
8.4.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 3J12062 CAPACITY : DIMENSION OR SIZE : 179 MATERIAL : SUS316	1	UNIT
8.4.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : O 250 etc MATERIAL : 316S.W.TEFLON etc	2	UNIT
8.5	MATERIAL FOR PUMP (61-201-J,JA)	CONSIST OF ITEM NO. 8.5.1 UP TO 8.5.3		
8.5.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQ-4875 CAPACITY : DIMENSION OR SIZE : 4875 MATERIAL : 5A3X	2	UNIT
8.5.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 2J2569 CAPACITY : DIMENSION OR SIZE : 105X265 MATERIAL : SUS316	1	UNIT
8.5.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : 2100X1400 MATERIAL : V#6500 NON-ASBESTOS etc.	2	UNIT
8.6	MATERIAL FOR PUMP (62-GA-103A,B)	CONSIST OF ITEM NO. 8.6.1 UP TO 8.6.3		
8.6.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQ-3375 CAPACITY : DIMENSION OR SIZE : 3375 MATERIAL : 5A5X	2	UNIT
8.6.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 2J2424 CAPACITY : DIMENSION OR SIZE : 70X136 MATERIAL : SUS316	1	UNIT
8.6.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : O 400 etc. MATERIAL : 316S.W.TEFLON etc.	2	UNIT
8.7	MATERIAL FOR PUMP (62-GA-401A,B)	CONSIST OF ITEM NO. 8.7.1 UP TO 8.7.3		
8.7.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBW-2500 CAPACITY	2	UNIT

		: DIMENSION OR SIZE : 2500 MATERIAL : 5A3X		
8.7.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 3J12238 CAPACITY : DIMENSION OR SIZE : 50X120 MATERIAL : SUS316L	1	UNIT
8.7.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : O 250 etc. MATERIAL : 316S.W.TEFLON etc.	2	UNIT
8.8	MATERIAL FOR PUMP (62-GA-502A,B)	CONSIST OF ITEM NO. 8.8.1 UP TO 8.8.3		
8.8.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQ-3125 CAPACITY : DIMENSION OR SIZE : 3125 MATERIAL : 5A4X	2	UNIT
8.8.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 2J2564 CAPACITY : DIMENSION OR SIZE : 65X203 MATERIAL : SUS316	1	UNIT
8.8.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : Dia=400 etc. MATERIAL : 316S.W.TEFLON etc.	2	UNIT
8.9	MATERIAL FOR PUMP (64-GA-2001A,B)	CONSIST OF ITEM NO. 8.9.1 UP TO 8.9.3		
8.9.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQW/QBQW-3000/2750 CAPACITY : DIMENSION OR SIZE : 3000/2750 MATERIAL : SIC/CARBON	2	UNIT
8.9.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 2J2558 CAPACITY : DIMENSION OR SIZE : 76.2X215 MATERIAL : SUS316	1	UNIT
8.9.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : 3.2X624.4 etc. MATERIAL : 18-8S.WTEFLON etc.	2	UNIT
8.10	MATERIAL FOR PUMP (64-GA-2002A,B)	CONSIST OF ITEM NO. 8.10.1 UP TO 8.10.3		
8.10.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQW/QBQW-3625/3375 CAPACITY : DIMENSION OR SIZE : 3625/3375 MATERIAL : SIC/CARBON	2	UNIT
8.10.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 2J2561 CAPACITY : DIMENSION OR SIZE : 92.07X218.6 MATERIAL : SUS316	1	UNIT
8.10.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : 3.2X776.5 etc. MATERIAL : 18.8S.WTEFLON etc.	2	UNIT
8.11	MATERIAL CENTRIFUGAL PUMP & DRIVER (61-111-J)	CONSIST OF ITEM NO. 8.11.1 UP TO 8.11.3		
8.11.1	CASING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/1025, CAPACITY : 44 M3/HR, MAT'L : V#6500	1	UNIT
8.11.2	SPACER SLEEVE	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/1025, CAPACITY : 44 M3/HR, MAT'L : SUS304	1	UNIT
8.11.3	MECHANICAL SEAL CARTRIDGE (INCLUDE MECH. SEAL & SHAFT SLEEVE & MECH. SEAL COVER	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/1025, CAPACITY : 44 M3/HR,	2	UNIT
8.12	MATERIAL CENTRIFUGAL PUMP & DRIVER (61-115-J)	CONSIST OF ITEM NO. 8.12.1 UP TO 8.12.4		
8.12.1	CASE GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 6.9 M3/HR, MAT'L : V#6500	1	UNIT
8.12.2	GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 6.9 M3/HR, MAT'L : V#6500	1	UNIT
8.12.3	GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 6.9 M3/HR, MAT'L : V#6500	1	UNIT
8.12.4	GLAND PACKING	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 6.9 M3/HR	1	UNIT
8.13	MATERIAL CENTRIFUGAL	CONSIST OF ITEM NO. 8.13.1 UP TO		

	PUMP & DRIVER (61-116-JA)	8.13.3		
8.13.1	CASING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 8/1016, CAPACITY : 99.9 M3/HR, MAT'L : V#6500	2	UNIT
8.13.2	SPACER SLEEVE	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 8/1016, CAPACITY : 99.9 M3/HR, MAT'L : SUS304	2	UNIT
8.13.3	MECHANICAL SEAL CARTRIDGE (INCLUDE MECH. SEAL & SHAFT SLEEVE & MECH. SEAL COVER	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 8/1016, CAPACITY : 99.9 M3/HR,	1	UNIT
8.14	MATERIAL CENTRIFUGAL PUMP & DRIVER (61-202-J,JA)	CONSIST OF ITEM NO. 8.14.1 UP TO 8.14.3		
8.14.1	CASING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/816, CAPACITY : 44.4 M3/HR, MAT'L : V#6500	2	UNIT
8.14.2	SPACER SLEEVE	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/816, CAPACITY : 44.4 M3/HR, MAT'L : SUS304	2	UNIT
8.14.3	MECHANICAL SEAL CARTRIDGE (INCLUDE MECH. SEAL & SHAFT SLEEVE & MECH. SEAL COVER	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/816, CAPACITY : 44.4 M3/HR,	1	UNIT
8.15	MATERIAL FOR CENTRIFUGAL PUMP & DRIVER (61-203-J)	CONSIST OF ITEM NO. 8.15.1 UP TO 8.15.3		
8.15.1	CASING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/1025, CAPACITY : 44 M3/HR, MAT'L : V#6500	1	UNIT
8.15.2	SPACER SLEEVE	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/1025, CAPACITY : 44 M3/HR, MAT'L : SUS304	1	UNIT
8.15.3	MECHANICAL SEAL CARTRIDGE (INCLUDE MECH. SEAL & SHAFT SLEEVE & MECH. SEAL COVER	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 6/1025, CAPACITY : 44 M3/HR,	1	UNIT
8.16	MATERIAL FOR CENTRIFUGAL PUMP & DRIVER (61-204-J)	CONSIST OF ITEM NO. 8.16.1 UP TO 8.16.4		
8.16.1	CASE GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 6.9 M3/HR, MAT'L : V#6500	1	UNIT
8.16.2	GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 6.9 M3/HR, MAT'L : V#6500	1	UNIT
8.16.3	GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 6.9 M3/HR, MAT'L : V#6500	1	UNIT
8.16.4	GLAND PACKING	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 6.9 M3/HR	1	UNIT
8.17	MATERIAL FOR CENTRIFUGAL PUMP & DRIVER (61-GA-107A,B)	CONSIST OF ITEM NO. 8.17.1 UP TO 8.17.7		
8.17.1	HEAD GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : 3X10 WY-3, CAPACITY : 50.0 M3/HR, MAT'L : V#6590V	2	UNIT
8.17.2	PACKING HOUSING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : 3X10 WY-3, CAPACITY : 50.0 M3/HR, MAT'L : V#6590V	2	UNIT
8.17.3	MECHANICAL SEAL	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : 3X10 WY-3, CAPACITY : 50.0 M3/HR,	1	UNIT
8.17.4	BOWL BUSHING	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : 3X10 WY-3, CAPACITY : 50.0 M3/HR, MAT'L : CARBON	6	UNIT
8.17.5	LOWER BEARING BUSHING	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : 3X10 WY-3, CAPACITY : 50.0 M3/HR, MAT'L : CARBON	2	UNIT
8.17.6	PRESSURE REDUCING BEARING	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : 3X10 WY-3, CAPACITY : 50.0 M3/HR, MAT'L : CARBON	2	UNIT
8.17.7	LINE SHAFT BEARING	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : 3X10 WY-3, CAPACITY : 50.0	4	UNIT

		M3/HR, MAT'L : CARBON		
8.18	MATERIAL FOR CENTRIFUGAL PUMP & DRIVER (62-GA-201A,B)	CONSIST OF ITEM NO. 8.18.1 UP TO 8.18.3		
8.18.1	CASING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 10/1232, CAPACITY : 122 M3/HR, MAT'L : V#6500	2	UNIT
8.18.2	SPACER SLEEVE	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 10/1232, CAPACITY : 122 M3/HR, MAT'L : SUS304	2	UNIT
8.18.3	MECHANICAL SEAL CARTRIDGE (INCLUDE MECH. SEAL & SHAFT SLEEVE & MECH. SEAL COVER	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 10/1232, CAPACITY : 122 M3/HR,	1	UNIT
8.19	MATERIAL FOR CENTRIFUGAL PUMP & DRIVER (62-GA-304A,B)	CONSIST OF ITEM NO. 8.19.1 UP TO 8.19.3		
8.19.1	CASING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 12/1540, CAPACITY : 200 M3/HR, MAT'L : V#6500	2	UNIT
8.19.2	SPACER SLEEVE	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 12/1540, CAPACITY : 200 M3/HR, MAT'L : SUS304	2	UNIT
8.19.3	MECHANICAL SEAL CARTRIDGE (INCLUDE MECH. SEAL & SHAFT SLEEVE & MECH. SEAL COVER	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 12/1540, CAPACITY : 200 M3/HR,	1	UNIT
8.20	MATERIAL FOR CENTRIFUGAL PUMP & DRIVER (62-GA-403)	CONSIST OF ITEM NO. 8.20.1 UP TO 8.20.3		
8.20.1	CASING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 3/516, CAPACITY : 10 M3/HR, MAT'L : V#6500	1	UNIT
8.20.2	SPACER SLEEVE	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 3/516, CAPACITY : 10 M3/HR, MAT'L : SUS304	1	UNIT
8.20.3	MECHANICAL SEAL CARTRIDGE (INCLUDE MECH. SEAL & SHAFT SLEEVE & MECH. SEAL COVER	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 3/516, CAPACITY : 10 M3/HR,	1	UNIT
8.21	MATERIAL FOR CENTRIFUGAL PUMP & DRIVER (62-GA-501A,B)	CONSIST OF ITEM NO. 8.21.1 UP TO 8.21.3		
8.21.1	CASING GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 8/1232, CAPACITY : 120 M3/HR, MAT'L : V#6500	2	UNIT
8.21.2	SPACER SLEEVE	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 8/1232, CAPACITY : 120 M3/HR, MAT'L : SUS304	2	UNIT
8.21.3	MECHANICAL SEAL CARTRIDGE (INCLUDE MECH. SEAL & SHAFT SLEEVE & MECH. SEAL COVER	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SI 8/1232, CAPACITY : 120 M3/HR,	1	UNIT
8.22	MATERIAL FOR CENTRIFUGAL PUMP & DRIVER (62-GA-504)	CONSIST OF ITEM NO. 8.22.1 UP TO 8.22.4		
8.22.1	CASE GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 5.0 M3/HR, MAT'L : V#6500	1	UNIT
8.22.2	GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 5.0 M3/HR, MAT'L : V#6500	1	UNIT
8.22.3	GASKET	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 5.0 M3/HR, MAT'L : V#6500	1	UNIT
8.22.4	GLAND PACKING	MFR : SHIN NIPPON MACHINERY CO. LTD., MODEL : SIWO- XR 3/516, CAPACITY : 5.0 M3/HR	1	UNIT
8.23	MATERIAL FOR CIRCULATION PUMP (63-GT-2001AB & 63-GT-2101AB)	CONSIST OF ITEM NO. 8.23.1 UP TO 8.23.17		
8.23.1	TURBINE BEARING METAL	BRAND NAME/MODEL : SHINKO IND. LTD P.No. : 1625 CAPACITY : DIMENSION OR SIZE - MATERIAL : WJ2 S25C	2	UNIT
8.23.2	TURBINE BEARING METAL	BRAND NAME/MODEL : SHINKO IND. LTD	2	UNIT

		P.No. : 1625 CAPACITY : DIMENSION OR SIZE - MATERIAL : WJ2 S25C		
8.23.3	TURBINE THRUST BEARING METAL	BRAND NAME/MODEL : SHINKO IND. LTD P.No. : 1627 CAPACITY : DIMENSION OR SIZE - MATERIAL : WJ2 S25C	2	UNIT
8.23.4	TURBINE THRUST BEARING METAL	BRAND NAME/MODEL : SHINKO IND. LTD P.No. : 2118 CAPACITY : DIMENSION OR SIZE - MATERIAL : WJ2 S25C	2	UNIT
8.23.5	BALL BEARING FOR GOV. DRIV. SHAFT	BRAND NAME/MODEL : NSK P.No. : 1709 CAPACITY : DIMENSION OR SIZE - MATERIAL : SUJ2	2	UNIT
8.23.6	BALL BEARING FOR GOV. DRIV. SHAFT	BRAND NAME/MODEL : NSK P.No. : 1710 CAPACITY : DIMENSION OR SIZE - MATERIAL : SUJ2	2	UNIT
8.23.7	SPRING FOR EMERG. STOP VALVE	BRAND NAME/MODEL : SHINKO INO.LTD P.No. : 1234 CAPACITY : DIMENSION OR SIZE - MATERIAL : SUS316	2	UNIT
8.23.8	SPRING FOR OVERSPEED TRIP	BRAND NAME/MODEL : SHINKO INO.LTD P.No. : 1436 CAPACITY : DIMENSION OR SIZE - MATERIAL : SWPA	2	UNIT
8.23.9	TILTING BEARING	BRAND NAME/MODEL : SHIMADZU MECTEM P.No. : 7R CAPACITY : DIMENSION OR SIZE - MATERIAL : S30C/WJ1	2	UNIT
8.23.10	TILTING BEARING	BRAND NAME/MODEL : SHIMADZU MECTEM P.No. : 7L CAPACITY : DIMENSION OR SIZE - MATERIAL : S30C/WJ2	2	UNIT
8.23.11	SLEEVE BEARING	BRAND NAME/MODEL : SHIMADZU MECTEM P.No. : 8R CAPACITY : DIMENSION OR SIZE - MATERIAL : S30C/WJ3	2	UNIT
8.23.12	SLEEVE BEARING	BRAND NAME/MODEL : SHIMADZU MECTEM P.No. : 8L CAPACITY : DIMENSION OR SIZE - MATERIAL : S30C/WJ4	2	UNIT
8.23.13	ROLLER BEARING	BRAND NAME/MODEL : SHIMADZU MECTEM P.No. : 9 CAPACITY : DIMENSION OR SIZE - MATERIAL : #24034	2	UNIT
8.23.14	BEARING METAL FOR MAIN OIL PUMP (BUSHING)	BRAND NAME/MODEL : SHIMADZU MECTEM P.No. : 13.14 CAPACITY : DIMENSION OR SIZE - MATERIAL : ALCOA A750	2	UNIT
8.23.15	OIL FILTER ELEMENT	BRAND NAME/MODEL : NIKURA CORPORATION FTS-BP150- 65H CAPACITY : DIMENSION OR SIZE - MATERIAL : PAPER	2	UNIT
8.23.16	O-RING FOR OIL FILTER	BRAND NAME/MODEL : NIKURA CORPORATION FTS-BP150- 66H CAPACITY : DIMENSION OR SIZE - MATERIAL : NBR	3	UNIT
8.23.17	GLAND PACKING FOR HAND NOZZLE VALVE	BRAND NAME/MODEL : NIPPON PILLAR PACKING CO., LTD. CAPACITY : DIMENSION OR SIZE - MATERIAL : ASBESTOS GRAPHITE	4	UNIT
8.24	MATERIAL FOR PUMP (63-GA-2001ABC & 63-GA-2101AB)	CONSIST OF ITEM NO. 8.24.1 UP TO 8.24.6		
8.24.1	GLAND PACKING	BRAND NAME/MODEL : P#6501L CAPACITY : DIMENSION OR SIZE : 281X240X20,5 - MATERIAL : CARBONIZED FIBER	5	UNIT
8.24.2	SHAFT SLEEVE FOR GLAND PACKING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : 240X545 - MATERIAL : SUS304	2	UNIT
8.24.3	GASKET	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : 1280X2810X0,8 - MATERIAL : V#6500 NON ASBESTOS etc	5	UNIT
8.24.4	CASING RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : 734X675X50 - MATERIAL : SUS403	2	UNIT
8.24.5	IMPELLER RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : 675X655X45 - MATERIAL : SUS403	2	UNIT
8.24.6	BALL BEARING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : 320X180X52 - MATERIAL : -	2	UNIT

8.25	MATERIAL FOR PUMP (61-113-J,JA)	CONSIST OF ITEM NO. 8.25.1 UP TO 8.25.3		
8.25.1	MECHANICAL SEAL	BRAND NAME/MODEL : QBQ-3375 CAPACITY : DIMENSION OR SIZE : 3375 MATERIAL : 5A5X	2	UNIT
8.25.2	SHAFT SLEEVE FOR M.S.	BRAND NAME/MODEL : 3J12234 CAPACITY : DIMENSION OR SIZE : 70X135 MATERIAL : SUS316	1	UNIT
8.25.3	GASKET/O-RING	BRAND NAME/MODEL : EBARA CAPACITY : DIMENSION OR SIZE : O 400 etc. MATERIAL : 316S W. TEFLON etc.	2	UNIT
8.26	MATERIAL FOR SCREW COMPRESSOR	CONSIST OF ITEM NO. 8.26.1 UP TO 8.26.37		
8.26.1	MAIN BEARINGS 200UD W/O O-RING	BRAND NAME/MODEL : MYCOM / 200UD / G. TYPE, MATERIAL : STKM13A, WJ2	2	UNIT
8.26.2	MAIN BEARING 160UD W/O O-RING	BRAND NAME/MODEL : MYCOM / 160UD / G. TYPE, MATERIAL : STKM13A, WJ2	2	UNIT
8.26.3	SIDE BEARINGS 200UD W/O O-RING	BRAND NAME/MODEL : MYCOM / 200UD / G. TYPE, MATERIAL : STKM13A, WJ2	2	UNIT
8.26.4	SIDE BEARINGS 160UD /WO O-RING	BRAND NAME/MODEL : MYCOM / 160UD / G. TYPE, MATERIAL : STKM13A, WJ2	2	UNIT
8.26.5	THRUST BEARING 200UD	BRAND NAME/MODEL : NSK / 7313AFADFC7P5a, MATERIAL : SUJ2, FCD400	2	UNIT
8.26.6	THRUST BEARING 160UD	BRAND NAME/MODEL : NSK / 7313AFADFC7P5a, MATERIAL : SUJ2, FCD400	2	UNIT
8.26.7	LOCKKNUTS (SHAFT)	BRAND NAME/MODEL OR SIZE : MYCOM / AN13, MATERIAL : SS400	2	UNIT
8.26.8	LOCK WASHERS	BRAND NAME/MODEL OR SIZE : MYCOM / AW13, MATERIAL : SPCC	2	UNIT
8.26.9	LOCKKNUTS (SHAFT)	BRAND NAME/MODEL OR SIZE : MYCOM / AN12, MATERIAL : SS400	2	UNIT
8.26.10	LOCK WASHERS	BRAND NAME/MODEL OR SIZE : MYCOM / AW13, MATERIAL : SPCC	2	UNIT
8.26.11	THRUST BEARING SPACER (200UD)	BRAND NAME/MODEL : MYCOM / S45C, MATERIAL : S45C	2	UNIT
8.26.12	LOCKWASHERS (200UD THRUST BEARING)	BRAND NAME/MODEL : MYCOM / AW07, MATERIAL : SPCC	2	UNIT
8.26.13	THRUST BEARING SPACER (160UD)	BRAND NAME/MODEL : MYCOM / S45C, MATERIAL : S45C	2	UNIT
8.26.14	LOCKWASHER (160UD THRUST BRG)	BRAND NAME/MODEL : MYCOM / AW05, MATERIAL : SPCC	2	UNIT
8.26.15	TEFLON CAP SEAL 160UD	BRAND NAME/MODEL : MISUBISHI CABLE IND / CAP- 3BE100, MATERIAL : PTFE	2	UNIT
8.26.16	TEFLON V-RING	BRAND NAME : MISUBISHI CABLE IND., SIZE: 2X10X12, MATERIAL : PTFE	2	PC
8.26.17	MECHANICAL SEAL ASS'Y	BRAND NAME/MODEL : TANKEN SEAL SEIKOH. / BOS MATERIAL : see drawing (MS324340-00)	2	PC
8.26.18	GASKET KIT-NON ASBESTOS	BRAND NAME : NIPPON VALQUA IND. MATERIAL : NON-ASBESTOS	1	UNIT
8.26.19	O-RING KIT-VITON	BRAND NAME : MITUBISHI CABLE IND. MATERIAL : FPM	1	UNIT
8.26.20	POTENTIOMETER 1K	BRAND NAME/MODEL : JAPAN SERVO / N45S	1	PC
8.26.21	MAJOR PUMP REPAIR KIT	BRAND NAME : MYCOM	1	PC
8.26.22	OIL SEPARATOR COALESCING ELEMENTS	BRAND NAME/MODEL : DOLLINNGER / RSC0580-3, SIZE (mm) 238.8 OO X 457.2 L, MATERIAL : BOROSILICATE FIBER	2	UNIT
8.26.23	OIL COALESCER COALESCING ELEMENTS	BRAND NAME/MODEL : DOMNICK HUNTER / K330AA-TS, SIZE : 86mm OD X 610 mm L, MATERIAL : BOROSILICATE FIBER	2	UNIT
8.26.24	MANWAY GASKETS	BRAND NAME : WEZBRUK, SIZE : 450 mm DIA, MATERIAL : NON-ASBESTOS (GARLOCK)	2	UNIT

8.26.25	OIL FILTER ELEMENT	BRAND NAME : HILLIARD, SIZE : 127 mm OD X 457 mm L. (5"OD X 18"L), MATERIAL : FIBERGLASS	4	UNIT
8.26.26	OIL FILTER GASKETS	BRAND NAME : HILLIARD, SIZE : 6-5/8" DIA., MATERIAL : NON-ASBESTOS (GARLOCK)	4	UNIT
8.26.27	TEMPERATURE GAUGE	BRAND NAME/MODEL : ASHCROFT / 50EL60E, SIZE : 5" DIA., MATERIAL : STAINLESS STEEL	1	UNIT
8.26.28	PRESSURE GAUGE	BRAND NAME/MODEL : WIKA/233.54, SIZE : 4" DIA., MATERIAL : 304 STAINLESS STEEL	1	UNIT
8.26.29	DIFF. PRESSURE GAUGE	BRAND NAME/MODEL : ORANGE RESEARCH / 1201PC-4C- 4.5B, SIZE : 4-1/2" DIA., MATERIAL : ALUMINIUM	1	UNIT
8.26.30	RELAYS	BRAND NAME/MODEL : ALLEN BRANDLEY / 700-HF-32A1, DIMENSION (mm) : 30 (W) X 70 (L) X 60 (H), MATERIAL : PLASTIC	1	UNIT
8.26.31	CIRCUIT BREAKER	BRAND NAME/MODEL : ALLEN BRANDLEY / 1492-G250, DIMENSION (mm) : 18 (W) X 69 (L) X 89,7 (H), MATERIAL : PLASTIC	1	UNIT
8.26.32	CERCUIT BRAKER	BRAND NAME/MODEL : ALLEN BRANDLEY / 1492-G250, DIMENSION (mm) : 18 (W) X 69 (L) X 89,7 (H), MATERIAL : PLASTIC	1	UNIT
8.26.33	MOTOR BEARING	BRAND NAME : HOOVER, SIZE : 6313C3, MATERIAL : CAST IRON	1	UNIT
8.26.34	MOTOR TERMINAL BOX	BRAND NAME/MODEL : TOSHIBA / TBOX 130-7524-13, DIMENSION (mm) : 260 X 385 X 204, MATERIAL : CAST IRON	3	UNIT
8.26.35	PACKING	EQUIPMENT NO : 61-103-E, 61-104-E, 61-105-E, 61-129-F, 61- 201-E, 61-202-E, SPEC : SIZE APPROX 1"-4". MATRL : SS/CS	102	M3
8.26.36	INJECTION PLATE	EQUIPMENT NO : 61-103-E, 61-104-E, 61-105-E, 61-129-F, 61- 201-E, 61-202-E, SPEC : MODEL 804, MATRL : SS/CS	3	PC
9.1	WATER TREATMENT PLANT (WTP)			
	CENTRIFUGAL PUMP	CONSIST OF ITEM NO. 9.1.1 UP TO 9.1.8		
9.1.1	MAINTENANCE KIT	Equipment No. : 63GA1002A/B, Manufacture / Model : 3196 GOULDS VERTICAL, POS NO. R196MKM10	2	PC
9.1.2	GLAND PACKING	Equipment No. : 63GA1002A/B, Manufacture / Model : 3196 GOULDS VERTICAL, POS NO. A10181A06	1	PC
9.1.3	LABYRINTH SEAL	Equipment No. : 63GA1002A/B, Manufacture : GOULD VERTICAL, Model : 3171, POS NO. A05501E000	2	PC
9.1.4	OIL SEAL	Equipment No. : 63GA1002A/B, Manufacture : GOULD VERTICAL, Model : 3171, POS NO. 869047071	2	PC
9.1.5	MAINTENANCE KIT	Equipment No. : 63GA1001A/B, Manufacture : GOULD VERTICAL, Model : 3196XLTX, POS NO. R196MKM15	2	PC
9.1.6	GLAND PACKING	Equipment No. : 63GA1001A/B, Manufacture : GOULD VERTICAL, Model : 3196XLTX, POS NO. A0108A12	1	PC
9.1.7	MAINTENANCE KIT	Equipment No. : 63GA1002A/B, Manufacture : GOULD VERTICAL, Model : 3196XLTX, POS NO. R196MKM13	2	PC
9.1.8	GLAND PACKING	Equipment No. : 63GA1002A/B, Manufacture : GOULD VERTICAL, Model : 3196XLTX, POS NO. A101BA12	1	PC
9.2	DOSING PUMP	CONSIST OF ITEM NO. 9.2.1 UP TO 9.2.8		
9.2.1	DIAPHRAGM	Equipment No. : 63-GA-1014A/B, Manufacture : GEMU, Model : LK-F41S6, POS NO. L1019	1	PC
9.2.2	VALVE	Equipment No. : 63-GA-1014A/B, Manufacture : GEMU, Model : LK-F41S6, POS NO. L1010	2	PC
9.2.3	DIAPHRAGM	Equipment No. : 63-GA-1016A/B, Manufacture : GEMU, Model : LK-F41S6, POS	1	PC

		NO. L1019		
9.2.4	VALVE	Equipment No. : 63-GA-1016A/B, Manufacture : GEMU, Model : LK-F41S6, POS NO. L1010	2	PC
9.2.5	DIAPHRAGM	Equipment No. : 63-GA-1017A/B, Manufacture : GEMU, Model : A54S6, POS NO. L1019	1	PC
9.2.6	VALVE	Equipment No. : 63-GA-1017A/B, Manufacture : AXAROLS, Model : A54S6, POS NO. L1210	2	PC
9.2.7	DIAPHRAGM	Equipment No. : 63-GA-1015A/B, Manufacture : AXAROLS, Model : AXARDLS602, POS NO. AX0389	1	PC
9.2.8	VALVE	Equipment No. : 63-GA-1015A/B, Manufacture : AXAROLS, Model : AXARDLS602, POS NO. AX0380	2	PC
9.3	BLOWERS	CONSIST OF ITEM NO. 9.3.1 UP TO 9.3.4		
9.3.1	ELEMENT FILTER	Equipment No. : 63GB1003 A/B, Manufacture/Model : XN803, POS NO. ACMW4F	1	PC
9.3.2	DRIVE BELT 1	Equipment No. : 63GB1003 A/B, Manufacture/Model : XN803,	1	PC
9.3.3	BEARINGS	Equipment No. : 63GB1003 A/B, Manufacture/Model : XN803, POS NO. BSR014020200	1	PC
9.3.4	WEARING PIECES	Equipment No. : 63GB1003 A/B, Manufacture/Model : XN803, POS NO. BSR014090200	1	PC
9.4	CLARIFIER DRIVE			
9.4.1	DRIVE - REDUCER GEARBOX OIL SEAL	Equipment No. : 63GD1002, Manufacture/Model : Jpm30, POS NO. M/A4 99004-PA101	1	PC
9.5	DOSING PUMP	CONSIST OF ITEM NO. 9.2.1 UP TO 9.2.8		
9.5.1	FILTER DIFFERENTIAL PRESSURE INDICATING SWITCH	Equipment No. : 63PDIS8112, Manufacture/Model : Ashcroft, POS NO. M/A4 99004-PA102	1	PC
9.5.2	RAW WATER PRESSURE INDICATOR + SLURRY EFFLUENT PUMP 1.2 DISCHARGE PRESSURE GAUGE	Equipment No. : 63P18100 + 63P18104, Manufacture/Model : Ashcroft, POS NO. M/A4 99004-PA102	1	PC
9.5.3	CLARIFIED WATER PUMP 1-2 PRESSURE GAUGE	Equipment No. : 63P18106A/B, Manufacture/Model : Ashcroft, POS NO. M/A4 99004-PA102	1	PC
9.5.4	FILTER OUTLET PRESSURE GAUGE	Equipment No. : 63P18116A/B, Manufacture/Model : Ashcroft, POS NO. M/A4 99004-PA102	1	PC
9.5.5	BACKWASH WATER RECOVERY PUMP 1-2 PRESSURE GAUGE	Equipment No. : 63P18116A/B, Manufacture/Model : Ashcroft, POS NO. M/A4 99004-PA102	1	PC
9.5.6	CHLORINE EJECTOR SERVICE WATER PRESSURE GAUGE	Equipment No. : 63P18122, Manufacture/Model : Ashcroft, POS NO. M/A4 99004-PA102	1	PC
9.5.7	INSTRUMENT AIR LOW PRESSURE SWITCH	Equipment No. : 63P18129, Manufacture/Model : Ashcroft, POS NO. M/A4 99004-PA106	1	PC
9.6	DOSING PUMP	CONSIST OF ITEM NO. 9.2.1 UP TO 9.2.8		
9.6.1	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KITS : M/A4 99004-PA101-106, POS No. 25, CS BACS11 KIT 150SCTAMFS	1	PC
9.6.2	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KITS : M/A4 99004-PA101-106, POS No. 40, CS BACS11 KIT 150SCTAMFS	1	PC
9.6.3	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KITS : M/A4 99004-PA101-106, POS No. 50, CS BACS11 KIT 150SCTAMFS	1	PC

9.6.4	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KITS : M/A4 99004-PA101-106, POS No. 80, CS BACS11 KIT 150SCTAMFS	1	PC
9.6.5	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KITS : M/A4 99004-PA101-106, POS No. 25, CS BASS11 KIT 150TAMFS	1	PC
9.6.6	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 25, SS BASS12	2	PC
9.6.7	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 40, SS BASS12	1	PC
9.6.8	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 15, SS BASS12	2	PC
9.6.9	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 20, SS BASS12	2	PC
9.6.10	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 15, BASS12	1	PC
9.6.11	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 25, SS BASS12	1	PC
9.6.12	CHECK VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 39, CS CKCS12	1	PC
9.6.13	CHECK VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 26, CS CKCS12	1	PC
9.6.14	CHECK VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 171, CS CKCS12	1	PC
9.6.15	GATE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 50, CS GA CS11	1	PC
9.6.16	GLOBE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 25, CS GL CS12	1	PC
9.6.17	GLOBE VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, POS No. 15, CS GLCS12	1	PC
9.6.18	PRESSURE CONTROL VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, CS RG CS12	1	PC
9.6.19	PRESSURE CONTROL VALVE	Equipment No. : Various, Manufacture/Model : Pipeline Supplies/KIT : M/A4 99004-PA101-106, CS RG CS12	1	PC
9.7	PH SENSOR PROBLE			
9.7.1	PH PROBE ROSEMOUNT	Equipment No. : AE-8101, Manufacture/Model : Rosemount, 399pH+07, POS No. M/A4 99004-PA102	2	PC
9.8	ALSTOM LEVEL INSTRUMENT	CONSIST OF ITEM NO. 9.8.1 UP TO 9.8.4		
9.8.1	Level Instrument	Manufacture/Model : ENDRESS HAUSER, POS No. 828313-0200	1	PC
9.8.2	Level Instrument	Equipment No. : LIT8103&05 & 115, Manufacture/Model : ENDRESS HAUSER, POS No. 528160-1340	1	PC
9.8.3	HART MODULE	Equipment No. : LIT8103&05 & 115, Manufacture/Model : ENDRESS HAUSER, POS No. 535593-0001	1	PC
9.8.4	Level Instrument	Equipment No. : LSH8117 & 19AS/B & 28A/B, Manufacture/ Model : ENDRESS HAUSER, POS No. 924471-2200	1	PC
9.9	KROHNE FLOW INDICATOR			
9.9.1	A/O SERVICE WATER FLOW INDICATOR	Equipment No. : F18133, Manufacture/Model : Krohne, FA20R, POS No. M/A4 99004-PA105	1	PC

9.10	AUTOMATIC CHLORINATOR A/B	CONSIST OF ITEM NO. 9.10.1 UP TO 9.10.9		
9.10.1	EJECTOR SERVICE KIT	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. AAS1368	1	PC
9.10.2	ECONOMY CHERWELL SERVICE KIT	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. FQA1228	1	PC
9.10.3	MEDWAY 2 SERVICE KIT	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. AAS1180	1	PC
9.10.4	MEDWEY BUFFER PUMP TUBING	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. TF39	1	PC
9.10.5	CLYDE VACUUM SERVICE KIT	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. AAS1405	1	PC
9.10.6	VACUUM SWITCH SERVICE KIT	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. AAS1411	1	PC
9.10.7	CLYDE METER TUBE ASSEMBLY 500G/HR	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. AAS, Equipment No. 636	1	PC
9.10.8	CLYDE METER TUBE ASSEMBLY 1000G/HR	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. AAS, Equipment No. 634	1	PC
9.10.9	METER TUBE ASSEMBLY	Manufacture : Portacel, Equipment No. : 63FA1017A/B, POS No. TK147	1	PC
9.11	BUTTERFLY VALVE AND CHECK VALVE	CONSIST OF ITEM NO. 9.11.1 UP TO 9.11.14		
9.11.1	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 300, ANSI 150 Wafer, Cast Iron	2	PC
9.11.2	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 250, ANSI 150 Wafer, Cast Iron	1	PC
9.11.3	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 400, ANSI 1150 Wafer, Cast Iron	1	PC
9.11.4	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 100, ANSI 150 Wafer, Cast Iron	1	PC
9.11.5	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 300, ANSI 150 Wafer, Cast Iron	1	PC
9.11.6	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 350, ANSI 150 Wafer, Cast Iron	1	PC
9.11.7	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 400, ANSI 150 Wafer, Cast Iron	1	PC
9.11.8	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 80, ANSI 150 Wafer, Cast Iron	1	PC
9.11.9	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 100, ANSI 150 Wafer, Cast Iron	1	PC
9.11.10	BUTTERFLY VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. BF CI11 AO1 Equipment No. : Various, MO1, ANSI 150 Wafer, Cast Iron	1	PC
9.11.11	CHECK VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. CK CS11 300, CS	1	PC
9.11.12	CHECK VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. CK CS11 50, CS	1	PC
9.11.13	CHECK VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. CK CS11 80, CS	1	PC
9.11.14	CHECK VALVE	Equipment No. : Various, Manufacture/Model : Keystone, POS No. CK CS11 100, CS	1	PC
9.12	DIAPRAGM VALVES	CONSIST OF ITEM NO. 9.12.1 UP TO 9.12.8		
9.12.1	DIAPRAGM VALVES	Manufacture : GEMU, Model : DM CI11 80, POS NO. M/A4 99004-PA101-106, Material : Cast Iron	1	PC

9.12.2	DIAPRAGM VALVES	Manufacture : GEMU, Model : DM CI11 100, POS NO. M/A4 99004-PA101-106, Cast Iron	1	PC
9.12.3	DIAPRAGM VALVES	Manufacture : GEMU, Model : CI11 A0100, POS NO. M/A4 99004-PA101-106, Cast Iron	1	PC
9.12.4	DIAPRAGM VALVES	Manufacture : GEMU, Model : DM CI12 50, POS NO. M/A4 99004-PA101-106, Cast Iron	1	PC
9.12.5	DIAPRAGM VALVES	Manufacture : GEMU, Model : DM CI12 20, POS NO. M/A4 99004-PA101-106, Cast Iron	2	PC
9.12.6	DIAPRAGM VALVES	Manufacture : GEMU, Model : DM CI12 25, POS NO. M/A4 99004-PA101-106, Cast Iron	1	PC
9.12.7	DIAPRAGM VALVES	Manufacture : GEMU, Model : DM CI12 50, POS NO. M/A4 99004-PA101-106, Cast Iron	1	PC
9.12.8	DIAPRAGM VALVES	Manufacture : GEMU, Model : DM CI14 50, POS NO. M/A4 99004-PA101-106, Cast Iron	1	PC
9.13	MIXERS	CONSIST OF ITEM NO. 9.13.1 UP TO 9.13.2		
9.13.1	BEARING & SEALS KIT	Equipment No. : 63GO1001A/B, Manufacture/Model : EW2, POS NO. MA/4 99004--A105	4	PC
9.13.2	BEARING & SEALS KIT	Equipment No. : 63GO1005A/B, Manufacture/Model : EW2, POS NO. MA/4 99004--A105	4	PC
9.14	VALTEX GLOBE VALVE	CONSIST OF ITEM NO. 9.14.1 UP TO 9.14.5		
9.14.1	ACTUATOR REPAIR KIT	Equipment No. : LV-8105, Manufacture/Model : MARK ONE, POS NO. 37858.999.000	1	PC
9.14.2	BONNET GASKET	Equipment No. : LV-8105, Manufacture/Model : MARK ONE, POS NO. 1793.925	1	PC
9.14.3	SEAT RING GASKET	Equipment No. : LV-8105, Manufacture/Model : MARK ONE, POS NO. 1794.925	1	PC
9.14.4	PACKING	Equipment No. : LV-8105, Manufacture/Model : MARK ONE, POS NO. 20752.925.000	1	PC
9.14.5	GUIDE LINERS	Equipment No. : LV-8105, Manufacture/Model : MARK ONE, POS NO. 57360.927	1	PC
9.15	AIR RELEASE VALVE			
9.15.1	AIR RELEASE VALVE	Equipment No. : AR-001, Manufacture/Model : ARI D-050, POS NO. A-D-050-ANSI 150	1	PC
9.16	RUBBER EXPANSION JOINT	CONSIST OF ITEM NO. 9.16.1 UP TO 9.16.3		
9.16.1	RUBBER EXPANSION JOINT	Equipment No. : 14WW81005A1A2, POS O. RJ150/100, Manufacture : ARMFLEX	1	PC
9.16.2	RUBBER EXPANSION JOINT	Equipment No. : 16RW81015AAA21, POS O. RJ150/400, Manufacture : ARMFLEX	1	PC
9.16.3	RUBBER EXPANSION JOINT	Equipment No. : 14W81024AAA21, POS O. RJ150/350, Manufacture : ARMFLEX	1	PC
9.17	LEVEL GAUGE	CONSIST OF ITEM NO. 9.17.1 UP TO 9.17.3		
9.17.1	KLINGER LEVEL GAUGE GLAS 3X9	Equipment No. : LG8117, Manufacture/Model : Klinger, POS NO. : M/A4 99004-PA101	1	PC
9.17.2	RUBBER EXPANSION JOINT	Equipment No. : LG8119A/B, Manufacture/Model : Klinger, POS NO. : M/A4 99004-PA101	1	PC
9.17.3	RUBBER EXPANSION JOINT	Equipment No. : LG8128A/B, Manufacture/Model : Klinger, POS NO. : M/A4 99004-PA101	1	PC
9.18	FLOW CONTROL VALVE			
9.18.1	FLOW CONTROL VALVE 300 MM ANSI 150	Equipment No. : FO8134, POS NO. 99004-PA101, Manufacture: MARIC	1	PC
9.19	DEGAS WATER PUMP	CONSIST OF ITEM NO. 9.19.1 UP TO 9.19.2		
9.19.1	KLINGER LEVEL GAUGE GLAS 3X9	KSB Model Megachem C 80 - 400	2	PC
9.19.2	RUBBER EXPANSION JOINT	KSB Model Megachem C 80 - 400	2	PC
9.20	REGEN, WATER PUMP	CONSIST OF ITEM NO. 9.20.1 UP TO 9.20.2		
9.20.1	GASKET O-RING	Manufacture : KSB Model Megachem C 80 -	2	PC

		160		
9.20.2	MECHANICAL SEAL	Manufacture : KSB Model Megachem C 80 - 160	2	PC
9.21	NETRALISATION PUMP	CONSIST OF ITEM NO. 9.21.1 UP TO 9.21.2		
9.21.1	GASKET O-RING	Manufacture : KSB Model Megachem CX 100 - 200	2	PC
9.21.2	MECHANICAL SEAL	Manufacture : KSB Model Megachem CX 100 - 200	2	PC
9.22	PRESSURE VESSEL AND TANKS	CONSIST OF ITEM NO. 9.22.1 UP TO 9.22.5		
9.22.1	MANHOLE GASKETS	Manufacture : Neoprene, Dia 500 mm, 3mmt	11	PC
9.22.2	SIGHT GLASS GASKETS	Manufacture : Neoprene, 160 mmW x 460 mmH	11	PC
9.22.3	SIGHT GLASS	Manufacture : Acrylic, 110 mmW x 394, mmH	3	PC
9.22.4	NOZZLES FOR FILTER	Equipment No. : Type K1-0,5" - 1" WW - 60o L/Typ MU60-1" WW	10	PC
9.22.5	NOZZLES FOR EXCHANGERS	Equipment No. : Type P-0.2" - 1" WW - 60o L/Typ mm 60-1" WW	10	PC
9.23	INSTRUMENTATION	CONSIST OF ITEM NO. 9.23.1 UP TO 9.23.11		
9.23.1	PRESSURE GAUGE	Manufacture/Model : Wika, 233-50, dia 100 mm 0/6 KG/CM2	2	PC
9.23.2	SELENOID VALVE	Manufacture/Model : Burket Type 413, 5/2 way, 110VAC	5	PC
9.23.3	AIR FILTER REGULATOR	Manufacture/Model : SMC	1	PC
9.23.4	ROTAMETER (H2SO4)	Manufacture/Model : Tokyo Keiso AM-1401, 0.2-2 M3/H SS304 PVC LINED SG 1.83	1	PC
9.23.5	RATOMETER (NAOH)	Manufacture/Model : Tokyo Keiso AM-1401, 0.4-4 M3/H SS304 LINED SG 1.43	1	PC
9.23.6	CONDUCTIVITY ANALYSER			
9.23.7	- SENSOR FOR MB	Manufacture : Fisher-Rosemount, Model : 400, 0.01/cm	1	PC
9.23.8	- SENSOR FOR ANION	Manufacture : Fisher-Rosemount, Model : 400, 0.1/cm	1	PC
9.23.9	PH SENSOR	Manufacture : Fisher-Rosemount, Model : 399	2	PC
9.23.10	SILICA ANALYSER	Manufacture/Model : Ismaprene Tube P/N08891=A=6000, Tygon Tubing dia. 1.6/3.2mm, P/N 151399, 90002		
9.23.11	- TUBING SET	Manufacture/Model : Ismaprene Tube P/N08891=A=6000, Tygon Tubing dia. 2.4/4.0mm, P/N 15399, 90006	2	PC
9.24	CAUSTIC DOSING PUMP (AE)	CONSIST OF ITEM NO. 9.24.1 UP TO 9.24.2		
9.24.1	GASKETS/O-RINGS	Manufacture/Model : KSB for Pump, Model CPK C25-160	2	PC
9.24.2	MECHANICAL SEAL	Manufacture/Model : KSB for Pump, Model CPK C25-160	2	PC
9.25	CAUSTIC TRANSFER PUMP	CONSIST OF ITEM NO. 9.25.1 UP TO 9.25.2		
9.25.1	GASKETS/O-RINGS	Manufacture : KSB for Pump, Model Megachem C32 - 125,1	2	PC
9.25.2	MECHANICAL SEAL	Manufacture : KSB for Pump, Model Megachem C32 - 125,1	2	PC
9.26	CHEMICAL TRANSFER PUMP	CONSIST OF ITEM NO. 9.26.1 UP TO 9.26.5		
9.26.1	FRONT CASIGN & THRUST RING	Manufacture : Iwaki, Model MDM 1518 EKKFO7A - X2, Manufacture : Iwaki Pump, Model MDF-L-422 CFVV-D	2	PC
9.26.2	REAR CASING & SPINDLE ASSY	Manufacture : Iwaki, Model MDM 1518 EKKFO7A - X2, Manufacture : Iwaki Pump, Model MDF-L-422 CFVV-D	2	PC
9.26.3	IMPELLER * MOUNTH RING ASSY	Manufacture : Iwaki, Model MDM 1518 EKKFO7A - X2, Manufacture : Iwaki Pump, Model MDF-L-422 CFVV-D	2	PC

9.26.4	O-RING	Manufacture : Iwaki, Model MDM 1518 EKKFO7A - X2, Manufacture : Iwaki Pump, Model MDF-L-422 CFVV-D	3	PC
9.26.5	MAGNET CAPSULE & BEARINGS	Manufacture : Iwaki, Model MDM 1518 EKKFO7A - X2, Manufacture : Iwaki Pump, Model MDF-L-422 CFVV-D	2	PC
9.27	ACID DOSING PUMP (CE & MB)	CONSIST OF ITEM NO. 9.27.1 UP TO 9.27.2		
9.27.1	VALVE UNIT	Manufacture : Iwaki, Model LK-C74VC-15	4	PC
9.27.2	DIAPHRAGM	Manufacture : Iwaki, Model LK-B73VC-07	2	PC
9.28	CAUSTIC DOSING PUMP (MB)	CONSIST OF ITEM NO. 9.28.1 UP TO 9.28.3		
9.28.1	VALVE UNIT	Manufacture : Iwaki, Model LK-C74 VS4-15	2	PC
9.28.2	DIAGHRAGM	Manufacture : Iwaki, Model LK-C74 VS4-15	1	PC
9.28.3	CONDENSATE FILTER CARTRIDGES	Manufacture/Model : Filter CLR 10-30	288	PC
9.29	IA/PA COMPRESOR	CONSIST OF ITEM NO. 9.29.1 UP TO 9.29.11		
9.29.1	ELEMENT AIR FILTER	Equipment No. : 39903265, Manufacture : Ingersoil	2	PC
9.29.2	ELEMENT OIL FILTER	Equipment No. : 39911615, Manufacture : Ingersoil	1	PC
9.29.3	FUSE	Equipment No. : 39242458, Manufacture : Ingersoil	1	PC
9.29.4	FUSE	Equipment No. : 39118484, Manufacture : Ingersoil	1	PC
9.29.5	FUSE	Equipment No. : 39178736, Manufacture : Ingersoil	2	PC
9.29.6	SEAL, SHAFT	Equipment No. : 39332788, Manufacture : Ingersoil	1	PC
9.29.7	SEAL, WEAR SLEEVE	Equipment No. : 39332804, Manufacture : Ingersoil	1	PC
9.29.8	GREASE MOTOR 400 G	Equipment No. : 92844729, Manufacture : Ingersoil	1	PC
9.29.9	KIT - CYLINDER REPAIR	Equipment No. : 39862834, Manufacture : Ingersoil	1	PC
9.29.10	KIT - BLOWDOWN VALVE OVERHAUL	Equipment No. : 39932199, Manufacture : Ingersoil	1	PC
9.29.11	CHYVRON SL 200 OIL LUBRICANT	Equipment No. : 42377176, Manufacture : Ingersoil	2	PC
9.30	AMONIA LOADING ARM	CONSIST OF ITEM NO. 9.30.1 UP TO 9.30.4		
9.30.1	STYLE 50	Equipment No. : Style 50, CS/SS	1	PC
9.30.2	STYLE 40	Equipment No. : Style 40, CS/SS	1	PC
9.30.3	STYLE 80	Equipment No. : Style 80, CS/SS	1	PC
9.30.4	O' RING SEAL	Equipment No. : O' Ring, CS/SS	2	PC
9.31	PUMP	CONSIST OF ITEM NO. 9.31.1 UP TO 9.31.4		
9.31.2	FILTERED WATER PUMP	Manufacture : Torishima, EQUIPMENT NO : 63-GA-1003A,B,C TYPE CPCN 200-400 CENTRI - HOR, APPROX SPEC. : FLOW RATE 375 M3/H, DRIVEN BY MOTOR : POWER 75 KW.	3	UNIT
9.31.3	DEMINERALIZED WATER PUMP	Manufacture : EBARA, EQUIPMENT NO : 63-GA-1007A, TYPE 200X150 UCW-25 CENTRI - HOR, APPROX SPEC. : FLOW RATE 300 M3/H, DRIVEN BY MOTOR : POWER 90 KW.	1	UNIT
9.31.4	DEMINERALIZED WATER PUMP	Manufacture : EBARA, EQUIPMENT NO : 63-GA-1007B, TYPE 200X150 UCW-25 CENTRI - HOR, APPROX SPEC. : FLOW RATE 300 M3/H, DRIVEN BY TURBINE TYPE RLHA 19, POWER 80 KW.	1	UNIT
9.32	INSTRUMENT AIR DRYER AND COMPRESSOR	CONSIST OF ITEM NO. 9.32.1 UP TO 9.32.2		
9.32.2	INSTRUMENT AIR DRYER	EQUIPMENT NO : 63-FF5001, TYPE ULTRA TROCKNER HRE 3500 MD APPROX SPEC. CAP @ 7 BAR G 3500 M3/HR, FLOW RATE 1.965	1	UNIT

		M3/HR		
9.32.3	INSTRUMENT AIR COMPRESSOR	EQUIPMENT NO : I-GB5001 - TYPE SIERRA SM 250 W SCREW COMPRESSOR APPROX SPEC : CAP 2,015 NM3/HR DRIVEN BY MOTOR : POWER 250 KW	1	UNIT
9.33	MARINE LOADING ARM	CONSIST OF ITEM NO. 9.32.1 UP TO 9.32.2		
9.33.2	MAIN LOADING ARM FOR NH3	EQUIPMENT NO : A-JJ3001, TYPE ROTARY COUNTER WEIGHT RCMA 6" X 50" FP, PIGGY BACK LINE, APPROX FLOW RATE OF 320 M3/HR, Manufacture : FMC	1	UNIT
9.33.3	NH3 VAPOR RETURN ARM	EQUIPMENT NO : A-JJ3002, TYPE HYDRAULIC, 6" X 40" fp APPROX ARM LENGTH 6500 MM, Manufacture : FMC	1	UNIT
Diluar Ex Master List 763/KM.4/2001				
1	CATALYST	CATALYST CONSISTING OF ITEM 1.01 TO 1.10		
1.01	CATALYST FOR DESULFURIZER (61-108-D)	FOR DESULFURIZER 61-108-D, NICKEL MOLYBDENUM CATALYST, C20-7CDS 1/8" EXTRUSIONS AND ZINC-OXIDE CATALYST C7-4 3/16" PELLET	40	M3
1.02	CATALYST FOR PRIMARY REFORMER (61-101-B)	FOR PRIMARY REFORMER 61-101-B, NICKEL CATALYST 25-4 AND CATALYST 57-4G SIZE: 18X14 MM 4 HOLE RINGS	38	M3
1.03	CATALYST FOR SECONDARY REFORMER (61-103-D)	FOR SECONDARY REFORMER 61-103-D, NICKEL CATALYST C14-4GG 33X8MM 6 HOLES RING, AND C14-2-01 16X16MM RING	40	M3
1.04	CATALYST FOR HP Shift Converter (61-104-D1)	FOR HIGHT TEMPERATURE SHIFT CONVERTER 61-104-D1, IRON/CHROMIA CATALYST C12-4-02 6X6MM TABLET	70	M3
1.05	CATALYST FOR LP SHIFT CONVERTER (61-104-D2)	FOR LOW TEMPERATURE SHIFT CONVERTER 61-104-D2, COOPER/ZINC/ALUMINA CATALYST C18-7-01 6.4X3.2MM TABLET	90	M3
1.06	CATALYST FOR METHANATOR (61-106-D)	FOR METHANATOR 61-106-D, NICKEL CATALYST C13-4-04 4.8X2.4MM SPHERE	35	M3
1.07	CATALYST FOR AMMONIA COMVERTER (61-105-D)	FOR AMMONIA CONVERTER 61-105-D, PROMOTED IRON CATALYST KM1 1.5-3MM AND 3-6MM GRANULES, KM1R PREREDUCED CATALYST 1.5-3MM AND 3-6MM, GRANULES	88	M3
1.08	MOLECULAR SIEVES Z4-01	FOR MOLECULAR SIEVE DRIER 61-109-DA, DB AND MOLECULAR SIEVE REGENERATION GAS DRIER 61-111-D, MOLECULAR SIEVE 2.0-3.0MM BEADS AND 2.5-5.0MM BEADS	20	M3
1.09	IRON SPONGE	FOR IRON SPONGE VESSEL ADSORBENT 61-2001-DA, DB, DC, CONNELLY-GPM GRADE 15# FE203	300	M3
1.10	ACTIVATED CARBON	FOR PRETREATMENT a MDEA CARBON FILTER 61-203-L, ACTIVATED CARBON SGL 8 X 30 GRANULES	13	M3
1.11	ADSORBENT	FOR MERCURY GUARD CHAMBER ADSORBENT 61-202-D, ACTIVE CARBON HGR 4 X 10 MESH, GRANULES	16	M3
3	INSTRUMENT	CATALYST CONSISTING OF ITEM 3.01 TO 3.02		
3.01	INSTRUMENT CABLE	PVC INSULATED CABLE : 1P - 10P, 1.5-2.5SQMM/2C - 10C, 1.5 - 6SQMM	40000	M
3.02	CONTROL VALVE	TYPE: BALL VALVE, SIZE: 16" - 20", MATERIAL: CS/ALY/SS, RATING: ASME150LB RF C/W ACCESSORIES	3	PCS
OWNER CONTROL COST (OCC)				
1	CHEMICAL AND LUBRICANT			
1.1	FOR START UP	CHEMICAL AND LUBRICANT	1	LOT
1.2	FOR OPERATING	CHEMICAL AND LUBRICANT	1	LOT
2	Telephone & Paging System	To be notified	1	Lot
3	Walkie Talkie	To be notified	1	Paket
4	Equipment for Water Intake	To be notified	1	Lot

5	Material for Rotating Equipment	To be notified	1	Lot
6	Material for Static Equipment	To be notified	1	Lot
7	Material for Electrical Equipment	To be notified	1	Lot
8	Material for Instrumentation Equipment	To be notified	1	Lot
9	Laboratorium Equipment	To be notified		
9.1	Gas Chromatography (GC) Completed with Detector PID & TCD Additional Tubing Stainless Steel 3/8" ; valve	To be Specified	2	Unit
9.2	Spectrophotometer, additional cover 10 mm; Cover 20 mm, Cover 50 mm			
9.3	Kart Fisher Titrator	To be Specified	1	Unit
9.4	Turbidimeter	To be Specified	2	Unit
9.5	PH Meter (meter)	To be Specified	1	Unit
9.6	PH Meter (digital)	To be Specified	2	Unit
9.7	Conductivity Meter	To be Specified	2	Unit
9.8	Sieve Shaker	To be Specified	1	Unit
9.9	Shaker Orbital	To be Specified	1	Unit
9.10	Gas Meter / WTM	To be Specified	8	Unit
9.11	Analytical Balance	To be Specified	2	Unit
9.12	Top Loading Balance	To be Specified	2	Unit
9.13	Oven	To be Specified	2	Unit
9.14	Dew Point Meter	To be Specified	1	Unit
9.15	Nitrogen Determinator	To be Specified	1	Unit
9.16	Orsat Precison Gas Holplate	To be Specified	2	Unit
9.17	Hotplate	To be Specified	2	Unit
9.18	Magnetic Stirrer & Hotplate	To be Specified	2	Unit
9.19	Vacuum Pump	To be Specified	2	Unit
9.20	Stopwatch	To be Specified	3	Unit
9.21	Sleve	To be Specified	2	Unit
9.22	Water Bath	To be Specified	2	Unit
9.23	Regulator Gas Cylinder	To be Specified	7	Unit
9.24	Humidity Meter	To be Specified	1	Unit
9.25	Fume Hood / Draft Cahmber	To be Specified	2	Unit
9.26	Laboratory Furniture	To be Specified	3	Unit
9.27	Beaker Glass 1000 cc	To be Specified	12	Unit
9.28	Beaker Glass 500 cc	To be Specified	24	Unit
9.29	Beaker Glass 250 cc	To be Specified	24	Unit
9.30	Erlenmeyer 500 cc	To be Specified	24	Unit
9.31	Erlenmeyer 250 cc	To be Specified	36	Unit
9.32	Volumetric Flask 1000 cc	To be Specified	12	Unit
9.33	Volumetric Flask 500 cc	To be Specified	12	Unit
9.34	Volumetric Flask 250 cc	To be Specified	24	Unit
9.35	Volumetric Flask 100 cc	To be Specified	36	Unit
9.36	Volumetric Flask 50 cc	To be Specified	36	Unit
9.37	Volumetric Pipette 100 cc	To be Specified	24	Unit
9.38	Volumetric Pipette 50 cc	To be Specified	24	Unit
9.39	Volumetric Pipette 25 cc	To be Specified	24	Unit
9.40	Volumetric Pipette 15 cc	To be Specified	24	Unit
9.41	Volumetric Pipette 10 cc	To be Specified	36	Unit
9.42	Volumetric Pipette 5 cc	To be Specified	24	Unit
9.43	Pipette Graduated 10 ml	To be Specified	24	Unit
9.44	Pipette Graduated 5 ml	To be Specified	24	Unit
9.45	Automatic Buret 10 ml, with reservoir bottle 2 liter	To be Specified	6	Unit
9.46	Automatic Buret 25 ml, with	To be Specified	6	Unit

	reservoir bottle 2 litel			
9.47	Washing Bottle 1000 cc	To be Specified	12	Unit
9.48	Moisture Tube	To be Specified	12	Unit
9.49	Glass Sampling Bulb 250 cc	To be Specified	24	Unit
9.50	Glass Tubing, 1" dia	To be Specified	3	Unit
9.51	Scrubbing Bottle 250 cc	To be Specified	24	Unit
9.52	Desicator	To be Specified	2	Unit
9.53	T - Tube	To be Specified	24	Unit
9.54	Gas Sampling Bag (ballon type)	To be Specified	12	Unit
9.55	Stainless Steel Comb	To be Specified	4	Unit
9.56	Drying Cabinet	To be Specified	2	Unit
9.57	Flow Water (range 0-2 lt/min)	To be Specified	1	Unit
9.58	Tigon Tubing, 8 mm dia (1 roll = 10 m)	To be Specified	15	Unit
9.59	Sink, Stainless Steel	To be Specified	3	Unit
10	Inspection Equipment	To be notified	1	Unit
		TOTAL OCC		

BLT FACILITY

A. RIVER WATER FACILITY

ITEM NO	JENIS BARANG	SPEKIFIKASI TEKNIS	QTY	UNIT
1	Transfer Pumps	Type Centrifugal, flow rate : 1250 M3/h, Head 124 (shut-off less than 148) m; Material C.I. INCL. Moter 650 KW	2	Set
2	Intake Pump	Type Centrifugal, flow rate : 1375 M3/h, discharge pressure, 1.35 kg/cm2G; Including Motor	1	Set
3	Steel pipe 24"	Class A22 (CS)	1200	M
4	Steel pipe 16"	Class A22 (CS)	18	M
5	Steel pipe 14"	Class A22 (CS)	18	M
6	Steel pipe 3/4"	Class A22 (CS)	6	M
7	90 EL 24"	Class A22 (CS)	14	EA
8	45 EL 24"	Class A22 (CS)	5	EA
9	90 EL 16"	Class A22 (CS)	1	EA
10	ECC RED 24" X 16"	Class A22 (CS)	1	EA
11	ECC RED 16" X 14"	Class A22 (CS)	2	EA
12	FLG (SO) 24"	Class A22 (CS) 150#	2	EA
13	FLG (SO) 14"	Class A22 (CS) 150#	5	EA
14	Gate Valve 24"	Class A22 (CS) 150#	1	EA
15	Control Valve 14"	Class A22 (CS) 150#	1	EA
16	MOV 14"		1	EA
17	Flow Element 16"	Class A22 (CS) 150#	2	Set
18	Gate Valve 3/4"	Class A22 (CS) 150#	2	Set
19	Plug Class 3/4"	Class A22 (CS)	2	Set
20	Coupling 3/4"	Class A22 (CS)	2	Set
21	TEE 24"		1	Set
22	TEE 16"		1	Set
23	BLIND FLG 24"		1	Set
24	Cathodic Protection 1"		1	Set

B. BULK STORAGE FACILITY & HANDLING FACILITY

ITEM NO	JENIS BARANG	SPEKIFIKASI TEKNIS	QTY	UNIT
1	MATERIAL HANDLING AND BULK STORAGE EQUIPMENT	Mechanical and Electrical equipment, consist of item 1.1 up to 1.3		
1.1	<u>Mechanical Equipment</u>	Consist of item 1.1.1 up to 1.1.10.5	1	Unit
1.1.1	<u>Belt</u>	Consist of item 1.1.1.1 up to 1.1.1.4	1	Unit
1.1.1.1	Belt	Belt width 650 mm EP250/3.3-1.5 c/w Accessories (price included item 1.1.1)	1	Unit
1.1.1.2	Belt	Belt width 650 mm EP200/3.3-1.5 c/w Accessories (price included item 1.1.1)	1	Unit
1.1.1.3	Belt	Belt width 650 mm EP500/3.4-2.0 c/w Accessories (price included item 1.1.1)	1	Unit
1.1.1.4	Belt	Belt width 650 mm EP800/4 4-2.0 c/w Accessories (price included item 1.1.1)	1	Unit
1.1.2	Drive Unit	Consist of item 1.1.2.1 Up to 1.1.2.5		
1.1.2.1	Drive Unit	Type Helical Gear motor Power 7.5 kW Ratio 21.96 Output speed 65.5 RPM Voltage 440 IP 54 Insulation F c/w	1	Unit

		accessories (price included item 1.1.2)		
1.1.2.2	Drive Unit	Type Helical Gear motor Power 7.5 kW Ratio 25.66 Output speed 52.67 RPM Voltage 440 IP 54 Insulation F c/w accessories (price included item 1.1.2)	1	Unit
1.1.2.3	Drive Unit	Type 3 AC Squirrel Cage motor Power 75 kW Ratio 28.13 Output speed 52 RPM Voltage 440 IP 54 Insulation F c/w accessories (price included item 1.1.2)	1	Unit
1.1.2.4	Drive Unit	Type Helical Gear motor Power 75 kW Ratio 21.19 Output speed 69.6 RPM Voltage 440 IP 54 c/w accessories (price included item 1.1.2)	1	Unit
1.1.2.5	Tripper Drive Unit	Type Helical Gear motor Power 4 kW Ratio 90.76 Output speed 18 RPM Voltage 440 IP 54 c/w accessories (price included item 1.1.2)	1	Unit
1.1.3	Chain	Consist of item 1.1.3.1 Up to 1.1.3.5		
1.1.3.1	Chain	Type single roller chain Pitch 31.75 mm length 94 links c/w accessories (price include item 1.1.3.)	1	Unit
1.1.3.2	Chain	Type double roller chain Pitch 44.5 mm length 104 links c/w accessories (price include item 1.1.3.)	1	Unit
1.1.3.3	Chain	Type double roller chain Pitch 53.5 mm length 88 links c/w accessories (price include item 1.1.3.)	1	Unit
1.1.3.4	Tripper Chain 1	Type single roller chain Pitch 44.5 mm length 40 links c/w accessories (price include item 1.1.3.)	1	Unit
1.1.3.5	Tripper Chain 2	Type single roller chain Pitch 44.45 mm length 160 links c/w accessories (price include item 1.1.3.)	1	Unit
1.1.4	Chain Wheel/Spocket	Consist of item 1.1.4.1 Up to 1.1.4.8		
1.1.4.1	Conveyor Drive Chain Wheel	Type single strand pitch 31.75 mm No of teeth 17 diameter 65 mm c/w accessories (price included item 1.1.4)	1	Unit
1.1.4.2	Conveyor Drive Chain Wheel	Type single strand pitch 31.75 mm No of teeth 25 diameter 65 mm c/w accessories (price included item 1.1.4)	1	Unit
1.1.4.3	Conveyor Drive Chain Wheel	Type Double strand pitch 44.45 mm No of teeth 17 diameter 50 mm c/w accessories (price included item 1.1.4)	1	Unit
1.1.4.4	Conveyor Drive Chain Wheel	Type Double strand pitch 44.44 mm No of teeth 25 diameter 100 mm c/w accessories (price included item 1.1.4)	1	Unit
1.1.4.5	Conveyor Drive Chain Wheel	Type Double strand pitch 63.5 mm No of teeth 17 diameter 138 mm c/w accessories (price included item 1.1.4)	1	Unit
1.1.4.6	Conveyor Drive Chain Wheel	Type Double strand pitch 63.5 mm No of teeth 25 diameter 140 mm c/w accessories (price included item 1.1.4)	1	Unit
1.1.4.7	Tripper Drive Chain Wheel	Type single strand pitch 44.45 mm No of teeth 17 diameter 70 mm c/w accessories (price included item 1.1.4)	1	Unit
1.1.4.8	Tripper Drive Chain Wheel	Type single strand pitch 44.45 mm No of teeth 25 Bore diameter 70 mm c/w accessories (price included item 1.1.4)	1	Unit
1.1.5	<u>Lifting Chain Block</u>	Capacity 1 ton lifting height 25 meter c/w accessories	3	Unit
1.1.6	<u>Pneumatic Actiator</u>	Load capacity 600 N Stroke 200 mm c/w accessories	1	Unit
1.1.7	Brake	Type electrical hydraulic thrustors lifting force 880 N Voltage 800 c/w accessories	1	Unit
1.1.8	<u>Rall</u>	A 55 DIN 536 type P85 5A Acc to DIN 15086 size 16 No. 17942 c/w accessories	1	Unit
1.1.9	<u>Coupling</u>	Flexible Coupling Torque 1150 NM c/w accessories	1	Unit
1.1.10	<u>Air Heater</u>	Consist of item 1.1.10.1 up to 1.1.10.5	1	Unit

1.1.10.1	Air Filter for Fresh Air	Type Non-woven Fabric Washable Total Filter Area 16.5 m2 Face velocity 2.15 m/s/c/w accessories (price included 1.1.10)	1	Unit
1.1.10.2	Hot Air Blower	Type Centrifugal Air Flow Rate 129000 M3/H Pressure 83,5 mm WG C/W accessories (price included 1.1.10)	1	Unit
1.1.10.3	Fresh Air Blower	Type Centrifugal Air Flow Rate 129000 M3/H Pressure 83,5 mm WG C/W accessories (price included 1.1.10)	1	Unit
1.1.10.4	Electrical Air Heater	Type, Electric, head duty : 625000 kcal/h	1	Unit
1.1.10.5	Electrical Air Heater	Type, Electric, head duty : 40000 kcal/h	2	Unit
1.1.10.6	Hot Air Blower	Type, Centrifugal, flow capacity : 80000 m3/h	2	Unit
1.1.10.7	Fresh Air Blower	Type, Centrifugal, flow capacity : 80000 m3/h	2	Unit
1.1.11	<u>Protal Scrapper/Rectaimer</u>	Type Portal Scrapper Capacity 600MT/H Travelling Speed 0.6 - 22 Mfrnin Hoist Unit Speed 22/1.9 M/min Primary 0,8 Misecnd Secondary 0,8 Misecnd c/w accessories	1	
1.2.	<u>Electrical Equipment</u>	Consist of item 1.2.1 up to 1.2.2	1	
1.2.1	Bus Duct	480 V 2.000 KVA Three phase + E (BW 05) Busber with insulated material c/w accessories (price include item 1.2)	1	
1.2.2	Street Lighting Pole	Height 10 M Aluminium c/w accessories (price include item 1.2)	1	
1.3	Part Material of item 1	Part Material of machinery and equipment of item q	1	
	Total Bulk Storage and Handling Facilities			
	Total Master List BLT			
AIR SEPARATION PLANT				
1	Air Receiver tank	Type : Cylindrical, carbon steel Accessories : pressure gauge, safety valve, drain trap	1	Set
2	Pre Filter	Removal rating \leq 3 um Accessories : presure gauge	1	Set
3	Adsorber	Type : Cylindrical, carbon steel, Adsorbent desiccant, molekuler sieving carbon Accessories : pressure gauge	2	Set
4	Product Filter	Removal rating \leq 3 um	1	Set
5	Exhaust Silencer	Type open type	1	Set
6	Nitrogen Receiver Tank	Type Cylindrical, carbon steel, Accessories : Pressure gauge, safety valve	1	Set
7	Thatrumentation	Operation panel/Local panel, Switches & annunciators, interlock & alarm system, out put signal	1	Set
8	Control & Measuring System			
8.1	Oxygen Analyzer	Type Zirconium sensor, accessories : rotor meter, valve	1	Set
8.2	Porgrammable controller	Stored Program	1	Set
8.3	Switching Valve	Cylinder Valve	1	Set
8.4	Regulator	Mechanical	1	Set
8.5	Pressure Gauge	Bourtion type gauge	1	Set
8.6	Pressure Switch	Type : digital/analog indicator, Accessories : alarm contact or switch or 4-20 mADC out put	1	Set
8.7	N2 Product flow meter	Type Orifice plate/DP transmitt, out put 4-20 mADC	1	Set
9	Sampling Gas Piping	Stailless tubing	1	lot
10	Instrument Air Piping	Galvanized carbon steel and SUS tubing	1	lot
11	Piping & Fiting in PSA unit	To be Specified	1	lot
12	Instrumentation in PSA unit	To be Specified	1	lot
13	Valve in PSA unit	To be Specified	1	lot
14	Air Compressor	10 Barg, 1500 m3/hr	1	unit

Salinan sesuai dengan aslinya

u.b.
KEPALA BAGIAN T.U. DEPARTEMEN

KOEMORO WARSITO, S.H.
NIP. 060041898

MENTERI KEUANGAN REPUBLIK INDONESIA,
KEPALA BIRO UMUM
ttd,

BOEDIONO